STATEMENT OF
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Transportation Research Priorities: Maximizing Return on Investment of Taxpayer Dollars

Chairman Quayle, Ranking Member Wu, and Members of the Subcommittee:

On behalf of Secretary Ray LaHood, I'd like to thank you for the opportunity to appear here today to discuss the research, development and technology priorities of the U.S. Department of Transportation.

It will come as no surprise to this Subcommittee that the research, development and technology priorities of the Department are the same as the strategic objectives for American transportation that Secretary LaHood has set forth:

- Safety – our number one priority;
- State of Good Repair – optimal condition and performance of our infrastructure;
- Economic Competitiveness – targeted investments to better serve the traveling public and facilitate freight movement, while supporting American jobs and exports;
- Livable Communities – increasing travel choice and providing access to affordable transportation; and
- Environmental Sustainability – addressing transportation's impacts on air, water and natural ecosystems.

As always, the Department seeks to implement our research and technology programs in the most effective means possible, conducting research that advances national transportation goals while ensuring that the various Operating Administrations of the Department do not duplicate research efforts. The organization I am privileged to lead, the Research and Innovative Technology Administration, or RITA, guides the development of research and technology priorities, and research coordination across the Department.

RITA works to identify synergies and opportunities for collaboration in support of the Department's priorities. For example, RITA has pulled together all of the human factors experts across the Department to address the crucial safety issue of operator fatigue, no matter the mode.

Setting research priorities starts with the Research, Development and Technology (RD&T) Planning Council, which I chair. The Council consists of my fellow heads of the Operating

Administrations and key members of the Office of the Secretary. The Council sets forth guidance, oversees implementation, and identifies at a policy level the coordination that needs to occur to meet new challenges in research and technology. A recent example of this guidance is the creation of the DOT Safety Council, to share best practices and results in safety systems.

Our guidance is implemented through the RD&T Planning Team, which includes the Associate Administrators for research in each Operating Administration. The Team meets monthly to discuss ongoing research activities, to convene clusters of researchers and program managers in specific disciplines, to facilitate research alignment with DOT priorities, and to ensure that research we undertake has clear value and has a path to deployment. The Team coordinates DOT research with non-DOT-funded research being conducted in the states, at universities, in the private and non-profit sectors, and through the Transportation Research Board (TRB). We routinely interact with these and other stakeholders to ensure that research has champions willing to test, demonstrate, and deploy the results of our research.

A key tool that RITA has deployed over this past year to accelerate this collaboration are fourteen scientific "Research Clusters." These Clusters were identified by the Team as the priority topics on which DOT researchers should collaborate with each other and with our external stakeholders. Each Cluster has a dedicated on-line collaboration portal which includes shared research, activities, searches through the National Transportation Library, and links to research stored on TRB's Transportation Research International Documentation and Research in Progress databases.

The fourteen Research Clusters currently include:

- Data Driven Decision-Making,
- Economics,
- Energy Sustainability,
- Human Factors,
- Infrastructure and Materials,
- Livability,
- Risk-Based Analysis to Address Safety Issues,
- Modeling and Simulation,
- Multimodal Intelligent Transportation Systems,
- Policy Analysis,
- Positioning, Navigation and Timing (PNT),
- System Resilience and Global Logistics,
- Transportation Implications For an Aging Population and Those With Special Needs, and
- Travel Behavior.

RITA reaches out to other Federal agencies to address Administration research and technology priorities, and to make sure that our work on similar topics is complementary. For example, we serve on the interagency Biomass R&D Board, and recently hosted the Interagency Biofuels Infrastructure Workshop. We have significant interest in the Department of Energy's SmartGrid work, especially as it relates to electric vehicle deployment. Through our involvement at the National Science and Technology Council, we work on Administration priorities relating to

technical standards policy and development, nanotechnology in materials, and wireless broadband deployment.

RITA is the Department's lead on cross-cutting technology transfer activities. RITA's Technology Transfer program seeks to move the Department's investment in research and technology into application, and to facilitate commercialization. RITA hosts events to showcase research technologies developed by Departmentally-funded programs, most recently the April 6, 2011, University Research Technology Transfer Day at DOT Headquarters.

We have seen many DOT-funded research and technology results come to commercialization – among these are several of which you may have heard:

1. A Small Business Innovation Research (SBIR) project resulted in "Solar Roadways," the unique concept to make roads out of recyclable solar panels. Solar Roadways won the first GE Ecomagination Challenge, and we are funding a Phase II SBIR project.
2. The Northwestern University Transportation Center is using innovative analytical methods to determine the best locations in the Chicago area for electric vehicle charging stations. These innovations are already being applied in other regions to support electric vehicle deployment.
3. The Federal Aviation Administration's (FAA) Hughes Technical Center tested the engineered material arresting systems that safely stop aircraft that overshoot the runway end. It is deployed at over 50 runway ends at over 35 major airports, and has prevented seven major accidents.
4. Intelligent Transportation Systems (ITS) research has brought many improvements to daily transportation operations – traffic management centers, improved work zone safety, transit customer information services (like NextBus), electronic payment systems (like EZPass), and traveler information systems.

Deployment is thoughtfully and continuously coordinated from the start of the innovation cycle with our stakeholders in state and local governments, port and airport authorities, transit agencies, and all of the industries that build and operate America's transportation systems. Each Operating Administration conducts a research planning process to identify their top priorities for future operational and safety improvements. These planning efforts are consistently coordinated with stakeholders, both to ensure that we are meeting the needs of the people actually operating the system, and to ensure deployment champions in the field. Because DOT research results range from new data analyses, to new designs and materials, to more effective operational methods, to technologies like Intelligent Transportation Systems and the Next Generation Air Transportation System, methods for coordination and deployment are scaled to suit.

Much of our research is undertaken in response to Congressional mandate or National Transportation Safety Board (NTSB) recommendations and to other pressing safety issues, often to support new or refined safety regulations and guidance. We involve all parties from the beginning to the end of the innovation cycle to ensure that we are researching the best possible opportunities to resolve the safety issues, and that our results are deployable and economically effective in daily operations.

The Department works closely with almost 100 Standards Developing Organizations (SDOs) to ensure that the results of our research and technology demonstrations are incorporated into the

codes and standards that transportation operators use every day to work safely and efficiently. One of our closest partners in this effort is the American Association of State Highway and Transportation Officials (AASHTO), represented here today by John Halikowski. AASHTO routinely takes research results and incorporates them into AASHTO standards, guiding state and local transportation agencies in improving planning, design, operations and maintenance.

The Department is focused on working with our State and local partners to accelerate the deployment and acceptance of new technologies. For example, the FHWA Every Day Counts Initiative is designed to identify and deploy innovation aimed at shortening project delivery time, enhancing roadway safety, and protecting the environment. A major pillar of Every Day Counts is to move effective, proven and market–ready technologies into widespread use. In support of our local partners, the FHWA's Local Technical Assistance Program and Tribal Technical Assistance Program enables counties, parishes, townships, cities, towns and tribal governments to improve their operations by supplying them with a variety of training programs, an information clearinghouse, technology updates, and customized technical assistance.

Continued success in research and technology innovation and deployment requires us to keep what has worked, while continuing to find creative ways to break down barriers. The Administration supports the following goals:

- simplifying the existing surface transportation research program;
- maximizing research funding flexibility so that available resources are applied to Departmental and stakeholder priorities;
- using full and open competition, and peer review, to get the best possible researchers and technologists working on top priorities; and
- emphasizing performance-based management of programs.

I would like to call your attention to specific innovation reforms which the Obama Administration supports:

- authorizing FHWA a technology and innovation deployment program, specifically to test, evaluate, and accelerate the delivery and deployment of technologies;
- allowing FHWA to increase research efficiency by expanding the authority to conduct research in collaboration with international partners;
- reorganizing RITA's University Transportation Centers program on a fully-competitive consortia model, to better leverage the intellectual capital created through the Federal investment in the important work of the universities;
- authorizing a Multimodal Innovative Research Program to competitively award advanced multimodal transportation research projects, facilitating practical innovative approaches to address systemic transportation problems; and
- enabling RITA's National Transportation Library to establish agreements with other transportation libraries and information centers, to improve the accessibility and exchange of high quality transportation information and data that support operations, policy development, and decision-making.

Thank you for this opportunity to provide an overview of the Department's transportation research priorities. I look forward to answering any questions you may have.