

WRITTEN STATEMENT OF  
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BEFORE THE

SUBCOMMITTEE ON SURFACE TRANSPORTATION AND MERCHANT MARINE  
INFRASTRUCTURE, SAFETY, AND SECURITY  
COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION  
U.S. SENATE

HEARING ON

*Surface Transportation Reauthorization: Examining the Safety and Effectiveness of our  
Transportation Systems*

June 3, 2014

Chairman Blumenthal, Ranking Member Blunt, and Members of the Committee, thank you for the opportunity to appear before you with my colleagues today to talk about the Department's progress in implementing the directions of the Moving Ahead for Progress in the 21st Century Act (MAP-21), and the Administration's proposal to reauthorize surface transportation programs, called the GROW AMERICA Act. I will also discuss the recent elevation of the former Research and Innovative Technology Administration (RITA) into the Office of the Secretary.

Transportation research, technology and data are critical tools for improving the safety, efficiency, mobility, capacity and state of good repair of America's transportation systems; and for reducing transportation's environmental and societal impacts. The Office of the Assistant Secretary for Research and Technology is pleased to continue to lead the Department of Transportation's research coordination efforts, driving cross-modal collaboration to meet 21<sup>st</sup> Century challenges.

Continual development and adoption of new processes and advanced technologies are reducing project delivery times, improving system operations and capacity, extending the life of transportation infrastructure, and providing actionable information to travelers and transportation planners. As Secretary Anthony Foxx noted at January's Transportation Research Board's Annual Meeting, research and data have a significant role to play in addressing America's infrastructure deficit by improving planning and adopting innovative best practices; stretching scarce resources with well-researched, data-driven innovation resulting in smarter capital projects which are built better and cost less, making more funding available for projects. A good example of this is accelerated bridge construction, reducing the time for small bridge replacement – saving funds which can then be used for other work.

#### Moving Ahead for Progress in the 21st Century Act (MAP-21) – Our Progress

The Congress has long recognized the value of transportation research by funding research and data programs through the Highway Trust Fund. In my organization, three programs that you authorized under MAP-21 have continued to advance our common goals for American transportation – the Intelligent Transportation Systems (ITS) Research Program; the University Transportation Centers (UTC) Program, and the data and information programs of the Bureau of Transportation Statistics (BTS). Allow me to take a few moments to describe the progress we have made.

#### *Intelligent Transportation Systems (ITS) Research*

In ITS research, some of our team's progress has been attracting public attention – most notably through the ITS-funded Connected Vehicle Safety Pilot, the largest such test program in the

world, conducted through the University of Michigan Transportation Research Institute (UMTRI) in Ann Arbor, Michigan. The Department tested safety applications with everyday drivers under both real-world and controlled test conditions. These test results led to the National Highway Traffic Safety Administration's (NHTSA) February decision to move forward with vehicle-to-vehicle (V2V) communication technology for light duty vehicles. This technology will improve safety and has the potential to reduce non-impaired fatalities by 80%. It would do so by allowing vehicles to "talk" to each other and ultimately avoid many crashes altogether by exchanging basic, anonymous safety data, such as speed and position, ten times per second. This major decision was based largely on the research, technology developments, test deployments, and data collections and analyses conducted under the ITS Research Program. Research indicates that safety applications using V2V technology can address a large majority of crashes involving two or more motor vehicles. With safety data such as speed and location flowing from nearby vehicles, vehicles can identify risks and provide drivers with warnings to avoid other vehicles in common crash types such as rear-end, lane change, and intersection crashes.

But that's certainly not all. The Department continues to work collaboratively across the Operating Administrations towards connected vehicle applications for heavy duty vehicles, and our colleagues at the Federal Highway Administration are preparing to issue guidance in 2015 for installing vehicle-to-infrastructure applications for roadway safety and improved traffic operations and maintenance, drawing on the connected vehicle data that will be made available. ITS research has enabled multimodal Integrated Corridor Management (in part through demonstration projects in Dallas and San Diego), and Next Generation-911. Additionally ITS is

using connected vehicle technology research to reduce congestion, improve road weather information and real-time data capture, and reduce emissions.

In support of these advances, the ITS program continues to assess the legal and policy structures needed to make these safety, operational and environmental improvements a daily reality, with an emphasis on ensuring data privacy and on the technologies enabling security of cyber-physical systems. And, we continue to work actively with our partners in the standards developing organizations (SDOs) to ensure that the many private sector actors involved in ITS deployment – from Original Equipment Manufacturers (OEMs) to suppliers to technology firms to infrastructure and construction firms – all produce interoperable equipment and systems that can seamlessly share the data that enables safety and other applications. We continue to pursue this interoperability with our international partners as well, as transportation equipment and services are a global market. Finally, I note that all of this success, and the standards that support it, are based upon the availability of the 5.9 GHz Dedicated Short Range Communications (DSRC) spectrum. Allocated in the U.S. and internationally for transportation safety, the 5.9 GHz band was specifically selected to enable the ten-times-per-second exchange of information needed to bring to reality the safety improvements that remain the primary goal of ITS research.

#### *University Transportation Centers (UTC) Program*

Since the late 1980's, Congress has acknowledged the important contributions made to transportation research, technology transfer, education and workforce development by America's universities. While the form and structure of the UTC Program has changed many times over the

years, the work of the UTCs in developing solutions to the problems faced by the federal and state departments of transportation, in bringing innovation to the transportation system, and in developing the next generation of transportation leaders, has enriched the nation.

We are extremely pleased with the consortia of universities selected under the full and open competition enabled by MAP-21. Covering over 120 universities which bring expertise in multiple disciplines, both traditional (civil engineering) and not (public health, psychology and sociology, studying safety culture), UTCs enable the systemic, interdisciplinary, cross-modal research we need to address increasingly complex challenges that cross traditional boundaries. UTCs do this while educating undergraduate and graduate students in the technical and problem-solving skills we need moving forward – a “win –win” if I’ve ever heard one. I always enjoy the opportunity to meet with the bright young students at our UTCs, to hear about what exciting new things they are developing in the laboratories and classrooms, and how their own lives are changing, even as they add to our transportation knowledge. I encourage the members of this Committee to take those opportunities as well.

In MAP-21, we were directed to expand the transparency of the UTC grant selection process; to include more external reviewers; and to select and fund the selected grants by October 1, 2013. I am pleased to report that we met all of these mandates, and in doing so selected the most vibrant group of UTCs yet. Starting from a relatively new place for us – with no designated UTCs and with a Secretariially-determined set of strategic research goals – we established robust, thematically-focused review teams so that experts in topic areas were aligned with the proposals most appropriate to their areas. While my office was ultimately responsible for the process,

well-managed by the hardworking UTC program staff, the review teams drew from all DOT Operating Administrations and from numerous outside experts, organized by topic area. Together, the teams worked through the 142 applications received for the 35 UTC grants – a record response – to bring out the best fits to meet our research goals. As required by MAP-21, each applicant received copies of the written reviews used in the evaluation process, so that those not selected know how to improve their applications for the next time, and those selected know how to improve upon identified weaknesses as they execute the grants. This enhanced process worked so well that we received no complaints about the process or the fairness of the selections. In addition, we were able to recompete two grants for which we did not receive applications the review teams thought sufficient, instead of being forced to select lower quality applications. It is our hope that this demonstrated process will be continued under the next authorization.

It is exciting to me to see the results we are already starting to garner from our MAP-21 UTCs. For example, in the aftermath of Superstorm Sandy, one of our UTCs collaborated with a private partner to use mobile Light Detection and Ranging (LiDAR) technology to assess storm damage to buildings, roadways, and utilities in the devastated coastal communities of New York and New Jersey. This work has led directly to commercial availability of equipment and techniques to quantify the disastrous effects of a major storm, and to use that data to help communities prepare for and recover from future extreme weather events.

Work in robotic bridge inspections, automated vehicles, wireless monitoring of the structural integrity of bridges, improvements in livability and environmental sustainability, and broad advances in freight movement and capacity, economic competitiveness, passenger safety, and

more effective operations and maintenance – all are developments we are already starting to see, and we look forward to more innovations in the future as our UTCs partner with state DOTs, local agencies, transit agencies, rail companies, and the private sector to deliver solutions and a trained workforce for American transportation.

### *Bureau of Transportation Statistics (BTS)*

BTS continues to fulfill its role as one of the Federal Government's thirteen designated principal statistical agencies, producing key information to illuminate public and private decisions on a range of transportation-related topics. BTS places a priority on making data readily available, and has recently taken steps to improve access to geospatial data through the National Transportation Atlas Viewer and to all forms of transportation data through BTS' National Transportation Library (NTL). BTS products include the Commodity Flow Survey and its Transborder Freight Data Program, which are the foundation of our understanding of freight transportation and of the Federal Highway Administration's (FHWA) Freight Analysis Framework (FAF). BTS data on airline traffic, finance, and on-time performance are widely cited. BTS also compiles a wide range of performance data in the National Transportation Statistics and State Transportation Statistics online reports.

While MAP-21 largely continued existing BTS functions and products, there were several new requirements on which we have been making significant progress. Asked to establish a program to integrate safety data across modes, and to address gaps in safety data programs of the Department, BTS led the establishment of the continually-growing [Safety.data.gov](https://www.safety.data.gov), and is continuing to drive the multi-Operating Administration assessment of safety data gaps. BTS has

also expanded its Confidential Close Calls Reporting Program. BTS supports MAP-21's performance measurement goals by publishing performance data through the National Transportation Statistics and the Transportation Statistics Annual Report; and by providing performance data to the annual DOT Performance and Accountability Reports.

BTS's National Transportation Library was given a much broader mandate in MAP-21, now being required to serve as a central depository for research results and technical publications of the Department; to provide a central clearinghouse for transportation data and information of the Federal Government; to serve as coordinator and policy lead for transportation information access; and to coordinate efforts among, and cooperate with, transportation libraries, information providers, and technical assistance centers, with the goal of developing a comprehensive transportation information and knowledge network. Accomplishing this far-reaching mandate within the unchanged BTS authorized funding level has been a significant challenge, but we are making progress. The dedicated NTL staff digitized 20,000 pages of DOT historical documents in FY13, and expects to meet the same target for FY14, to make these documents accessible. NTL established the National Transportation Knowledge Network Steering Committee to receive, monitor, and implement coordinated information management projects across the community, and plans to launch a National Transportation Data Archive. NTL will serve as the public access repository for USDOT publications as the Department implements the Office of Science and Technology Policy memorandum, "Increasing Access to the Results of Federally Funded Scientific Research."

Elevation of RITA into the Office of the Secretary



However, the item with the largest impact on my organization took place after the passage of MAP-21. As you know, the Consolidated Appropriations Act of 2014, enacted this past January, transferred “the powers and duties, functions, authorities and personnel of the Research and Innovative Technology Administration . . . to the Office of the Assistant Secretary for Research and Technology in the Office of the Secretary.” This is the culmination of an initiative begun in the President’s FY13 Budget, which requested the elevation of RITA:

To strengthen research functions across the Department by providing a prominent, centralized focus on research and technology . . . The proposed Office of the Assistant Secretary for Research and Technology will improve coordination and collaboration between operating administrations, resulting in higher quality research outcomes.

The Department has hit the ground running in adopting the changes enacted into law, is transitioning to ensure this new office is the focal point for research across DOT, and is looking across the research investments made in all of the modes to improve the delivery of transportation research and technology programs, and of national statistical programs. I had the privilege of being confirmed by the Senate as the RITA Administrator on October 16, 2013, and was sworn in as the Assistant Secretary for Research and Technology on January 23, 2014. We continue to pursue all of the missions and programs of the former RITA as we transition to the new organizational construct.

The elevation to the Office of the Secretary will bring more leadership insight into transportation research and development, and data and statistics, and will heighten their influence on policy discussions and decision-making. Organizational change does not happen overnight, but I am already seeing how what we do is being drawn into leadership discussions as part of the Office

of the Secretary, in a way we were not when we were an Operating Administration. The elevation also places a new emphasis on our research, development and technology coordination and collaboration role, and on our technology transfer functions. In addition, the elevation returns responsibility for Positioning, Navigation and Timing (PNT) to the Secretary's Office, appropriate for a critical responsibility of the Department which impacts all non-military users of the Global Positioning System (GPS). We will continue to oversee the wide-ranging and cross-modal efforts of the Volpe National Transportation Systems Center and the Transportation Safety Institute.

#### GROW AMERICA Act

The Generating Renewal, Opportunity, and Work with Accelerated Mobility, Efficiency, and Rebuilding of Infrastructure and Communities throughout America Act, or GROW AMERICA Act, is a \$302 billion, four-year transportation reauthorization proposal that provides increased and stable funding for our Nation's highways, bridges, transit, and rail systems, and for the research and data that support them. The GROW AMERICA Act recognizes that research and data play a significant part in improving safety, transportation planning and decision making, and preparing the nation's workforce as we move forward into the 21st Century. Altogether, the GROW AMERICA Act commits more than \$2.6 billion over four years to advance research and innovations, ensuring decision makers at all levels will have access to enriched data and analysis, advanced research, and cutting-edge technologies.

The Highway Trust Fund research and statistical programs of the Office of the Assistant Secretary will continue their existing missions and remain key components of the newly-elevated

office. The GROW AMERICA Act would provide these programs with a small inflationary increase in funding levels to address critical priorities in delivering actionable research and statistical results to the Department and to our many external partners. However, in coordination with our modal and interagency partners, we are proposing a few changes in the research and data programs to support Administration priorities, especially the proposed freight investment program, which I would like to highlight for you.

### *New Programs*

- National Cooperative Freight Transportation Research Program: The GROW AMERICA Act establishes the National Cooperative Freight Research Program in support of Departmental freight goals, including a specific, targeted focus on hazardous materials transportation. (Section 8101)
- Prioritizing a Multimodal Research Program: The GROW AMERICA Act creates a Priority Multimodal Research Program enabling cross-agency research and innovation along three priority areas: infrastructure systems resilience and recovery; advanced research towards a Zero Emissions Transportation System; and a multimodal STEM Education and Workforce Development program. (Section 8103)

### *Changes to Existing Programs*

- Advancing Intelligent Transportation Systems: The GROW AMERICA Act will improve vehicle and passenger safety by advancing intelligent systems in vehicles and in smarter infrastructure across all modes, and by exploring new ways to utilize real-time information to aid the flow of goods along America's freight corridors.

- Accelerating Deployment of Highway Technologies and Innovations: The GROW AMERICA Act allows the allocation of up to \$25 million per year from the Highway Account to implement the findings and results of the second Strategic Highway Research Program (SHRP2), which promises innovations in highway safety, renewal, reliability, and capacity. (Section 2003)
- Maximizing the Research, Technology and Workforce Results of the UTCs: The GROW AMERICA Act enhances the effectiveness of the current University Transportation Centers (UTCs) program by enabling funds to flow into cross-disciplinary university transportation research by expanding the sources for grant matching funds to include funding from more Federal-Aid accounts and funding provided by other DOT operating administrations. (Section 8102)
- Supporting National Goals in Freight Policy and Planning: The GROW AMERICA Act will improve data and technology support to national freight goals by strengthening the Bureau of Transportation Statistics' (BTS) ability to require responses to freight and intermodal data surveys, and by enabling nationally consistent statistics on maritime port performance. In addition, the Act will add an Intelligent Transportation Systems (ITS) freight research, demonstration and applications focus to the ITS Research Program goals. (Sections 8104, 8105)

#### *Reflecting Organizational Change*

The GROW AMERICA Act continues the transformation of research offices, as laid out by Congress, elevating the former Research and Innovative Technology Administration (RITA) into the Office of the Assistant Secretary for Research and Technology. As is the case with other

transportation programs, having multi-year certainty of our authorization and funding allows for better planning and decision-making about research and data investments.

Thank you for this opportunity to update you on our progress, and I look forward to your questions.

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