U.S. HOUSE OF REPRESENTATIVES

SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

HEARING CHARTER

Transportation Research Priorities:
Maximizing Return on Investment of Taxpayer Dollars

Tuesday, June 14, 2011
10:00 a.m. – 12:00 p.m.

2318 Rayburn House Office Building

I. Purpose

On Tuesday, June 14, 2011, the Subcommittee on Technology and Innovation will convene a hearing to review the research, development, and technology (RD&T) activities of the Department of Transportation. The hearing will focus on issues related to the funding and prioritization of current research initiatives and how to maximize the efficiency of these activities. With the expiration of SAFETEA-LU in fiscal year 2009, this hearing will also examine research issues to inform the current Federal surface transportation reauthorization effort.

II. Witnesses

The Honorable Peter Appel, Administrator, Research and Innovative Technology Administration, U.S. Department of Transportation

Mr. John Halikowski, Director, Arizona Department of Transportation; Chair, American Association of State Highway and Transportation Officials Standing Committee on Research

Mr. David Gehr, Senior Vice President, Highway Market, Parsons Brinckerhoff; Chairman, American Society of Civil Engineers Transportation Policy Committee

Dr. Irwin Feller, Professor Emeritus of Economics, Pennsylvania State University; Senior Visiting Fellow, American Association for the Advancement of Science

Ms. Lynn Peterson, Transportation Policy Advisor, Office of Governor John Kitzhaber (OR)

III. Brief Overview

The Department of Transportation (DOT) annually supports more than $600 million in research, development, and technology deployment (RD&T) activities focused on surface modes of transportation (rail, transit, motor carrier and highway). DOT characterizes research funding into three main categories: applied, development, and technology. The first two categories are pre-implementation stage work, while the technology, or "T" classification, implies that funds are being used for technology deployment or field demonstration.

Secretary Ray LaHood's DOT priorities are organized around five strategic goals: safety, state of good repair, economic competitiveness, livable communities, and environmental sustainability. Several plans have provided strategic direction for the Department. DOT's most recent strategic plan, "New Ideas for a Nation on the Move[1]" provided goals for fiscal years 2006-2011. In 2006, the Research and Innovative Technologies Administration (RITA), the research coordination body of DOT, produced "The Transportation, Research, Development, and Technology Strategic Plan for 2006 to 2010[2]". The plan, mandated by the surface highway reauthorization bill passed in 2005 (PL-109-59, "SAFETEA-LU"), established a five-year pathway for DOT research activities. The Transportation Research Board, a part of the National Research Council, reviewed the plan and identified a number of strengths and weaknesses. One area of concern was that the plan did not "explain how the varied missions of DOT and its operating agencies influence the RD&T portfolio[3]." DOT does not have a current strategic plan for the Department or specific to RD&T activities, and current research priorities are not easily quantified or characterized. A draft strategic plan was made available for public comment in May 2010, but has not been finalized[4].

In November 2008, the Transportation Research Board produced a report titled, "The Federal Investment in Highway Research 2006-2009: Strengths and Weaknesses[5]". The Board made a number of recommendations for change to highway research programs, including improved engagement of the research community in the priority-setting process and subjecting research programs to merit-review.

The hearing will explore whether the research activities of DOT are well-executed and integrated across the Department, and how to efficiently address the long-term research and technology needs of the country. In particular, the relationship between states and the Federal government will be explored. The pending surface transportation reauthorization presents an opportunity to ensure transportation RD&T activities are aligned with national transportation priorities and to examine how the priorities will further the states' ability to incorporate transformational research results into their transportation systems.

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1 http://www.dot.gov/stratplan2011/dotstrategicplan.pdf
2 http://www.rita.dot.gov/publications/transportation_rd_t_strategic_plan/pdf/entire.pdf
3 Appendix A: http://www.rita.dot.gov/publications/transportation_rd_t_strategic_plan/pdf/entire.pdf
4 http://www.dot.gov/stratplan/dot_strategic_plan_10-15.pdf
5 http://onlinepubs.trb.org/Onlinepubs/sr/sr295.pdf

IV. Background

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which became law in August 2005, was the last comprehensive Federal surface transportation reauthorization bill. Since that authorization expired in fiscal year 2009, a series of extensions have been enacted to continue funding for programs. The most recent extension, the Surface Transportation Extension Act of 2011 (Public Law 112-5) extended surface transportation programs through September 30, 2011.

The DOT surface RD&T endeavor is conducted by a host of multi-modal Administrations: Those Administrations include the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the National Highway Traffic Safety Administration (NHTSA), the Federal Railroad Administration (FRA), and the Federal Motor Carrier Safety Administration (FMCSA). In addition, the Research and Innovative Technology Administration (RITA) conducts a small amount of internal research and primarily facilitates and supports coordination of research efforts across the DOT.

Department of Transportation Research, Development and Technology (RD&T) Activities[*]

Research and Innovative Technology Administration (RITA)

RITA is responsible for planning, coordination, facilitation, and review of DOT's research programs. The request includes $17.6 million for RITA to conduct a small amount of internal research and to coordinate research programs across the agencies. RITA oversees the following programs, which are funded out of other Administration's accounts:

Research Area (and source of funding)	**FY 2012 Request (millions)**
Intelligent Transportation Systems (FHWA)	$110.0
Univ. Transportation Center (UTC) Program (FHWA, FTA)	$100.0
Competitive UTC Consortia (FHWA, FTA)	$80.0
Bureau of Transportation Statistics (FHWA)	$35.0
UTC Multimodal Competitive Research Grants (FHWA)	$20.0
Multimodal Innovative Research Program (FHWA)	$20.0
Transportation Safety Institute (fee for service)	--
Volpe National Transportation Systems Center (fee for service)	--

Federal Highway Administration (FHWA)

FHWA's total RD&T request for FY12 is $200 million. Major research areas under the Highway Research and Development Program include:

[*] All numbers in this section are based on staff calculations

Research Area	FY 2012 Request (millions)
Structures (improving and maintaining infrastructure)	$75.0
Planning, Environment, and Realty (environmental research, project delivery improvement initiatives, asset management)	$35.0
Highway Operations (research to improve movement of people and goods)	$25.0
Safety	$25.0
Next Generation Research & Technology	$22.0
Policy (analysis on emerging domestic and international issues)	$18.0

FHWA also funds the Future Strategic Highway Research Program (SHRP II), administered by the Transportation Research Board, which is a multi-year research effort focused on moving transportation research to deployment in the field in order to reduce congestion, improve highway safety, and rehabilitate aging infrastructure. While no funds were requested to continue the program in FY2012, the last enacted funding was $50 million in FY10.

Federal Transit Administration (FTA)

FTA's FY12 National Research & Technology Deployment request is $129.2 million. When funding for implementation and deployment is removed, the total amount focused on research and development is about $40 million. FTA's requested research and development activities in FY12 include:

Innovative safety research, industry analysis research, rail programs and infrastructure research, transit standards development, and transit planning and forecasting research under the National Program ($14.5M); transit-focused University Transportation Centers Program ($8.0M); Clean Fuels and Environmental Research ($14.8M); Greenhouse Gas and Energy Reduction Deployment and Demonstration Programs. $10 million would be provided for two transit agencies to serve as "test beds," and $65 million for demonstration activities ($75.0M).

National Highway Traffic Safety Administration (NHTSA)

NHTSA's FY12 request for Research and Analysis is $78.2 million which includes:

Crashworthiness Research ($21.4M), Crash Avoidance Research ($12.7M), and Alternative Fuels Vehicle Safety ($1.5M). Additionally, $13 million is requested for Highway Safety Research.

Federal Railroad Administration (FRA)

The FRA Core R&D request of $40 million includes funding for: railroad systems, human factors, track and train interaction, HAZMAT travel, and the National Cooperative Rail Research

Program, among other areas. Additionally, $50 million is requested for High-Speed Rail R&D. These funds are to address safety risks and fund new technology.

Federal Motor Carrier Safety Administration (FMCSA)

The FMCSA RD&T program request for FY 2012 is $11.6 million. The request includes the following research and development activities:

Produce Safer Drivers ($2.4M), Improve Safety of Commercial Vehicles ($200,000), Produce Safer Carriers ($1.1M), and Enable and Motivate Internal Excellence ($700,000).

V. Major Issues and Concerns

DOT Prioritization of Research and Performance Metrics

The current amount DOT spends on research to support surface programs is approximately one percent of federal expenditures on highways. Questions remain as to whether this is a sufficient amount, and whether the long-term research needs of the nation are being adequately addressed. In addition, the current strategic priorities for the DOT, which impact all programs, may not be well-aligned with the needs of stakeholders. Components such as livable communities, environmental sustainability, and economic competitiveness remain ill-defined, amorphous, and difficult to measure, especially as they relate to research programs. There are no Federal performance standards to guide states or standardized reporting metrics. Without a means for states to prove the effectiveness of their programs, and without the DOT requiring such justification coupled with clear strategic goals, it is challenging to ensure that federal funds are being used as efficiently and effectively as possible.

Competitive Funding and University Transportation Centers

The practice of earmarking funding in the surface transportation bill has expanded in recent reauthorization measures. The 2005 SAFETEA-LU legislation contained over 5,600 earmarks accounting for $21.7 billion in the highway title alone. Some transportation groups have opposed the practice of earmarking[6], arguing it constrains DOT's ability to invest strategically in RD&T[7]. In fact, SAFETEA-LU's research title earmarked more funding than was authorized by the title, so several research programs and projects were unable to be funded until a technical corrections Act was passed in 2008 to fix the research funding shortfall[8].

SAFETEA-LU provided about $70 million annually to support University Transportation Centers (UTCs) across the country. The act authorized an expansion in the number of UTCs from 33 to 60 UTCs, 20 of which were competitively selected. All UTCs require a portion of

[6] AASHTO Financing and Funding Recommendations: http://www.transportation.org/sites/policy_docs/docs/viii.pdf

[7] August 2, 2006 correspondence between the TRB and Dept. of Transportation: http://onlinepubs.trb.org/onlinepubs/reports/letterreport_usdotrd&tplan.pdf

[8] SAFETEA Technical Corrections Act (P.L. 110-224)

state matching funds, conduct basic and applied university-based transportation research, and are managed by RITA. Secretary LaHood recently made the decision, based on authority provided to DOT under the last extension bill (P.L. 112-5), to cease funding for all of the existing 59 UTCs and reform the program into a competitive, consortium-based system. Several other research programs funded through RITA, FTA, and FHWA also will not receive funding in FY11 as a result of the Secretary's decision. For FY2011, UTC applicants will be required to apply in consortia of at least two institutions of higher education. The UTC program has been cited as valuable to transportation research, as well as underutilized by DOT[9] and overly focused on highly applied research[10] instead of advanced research to support national transportation needs.

Highway Trust Fund Solvency

The current highway research programs have been funded through a series of extensions, which have transferred sums from the general fund. Driving has declined significantly in the last decade and vehicles have become more fuel efficient. Consequently, at the current rate of 18.4 cents per gallon, set in 1993, the Highway Trust Fund is no longer covering all of the surface transportation expenses. To remain solvent, the highway account has already required three transfers from the general fund totaling $29.7 billion. The most recent transfer of $14.7 billion in 2010[11] is expected to keep the account solvent through sometime in 2013. A means of adding more funds to the trust fund must be found, or the size of programs supported by DOT must decrease. In the current budget environment it is unclear whether the most viable path forward is to restore the solvency of the fund or to address financing needs in other ways.

[9] Pg 125 http://www.rita.dot.gov/publications/transportation_rd_t_strategic_plan/pdf/entire.pdf

[10] TRB Special Report 295, The Federal Investment in Highway Research 2006–2009: Strengths and Weaknesses, pg 75, http://onlinepubs.trb.org/Onlinepubs/sr/sr295.pdf

[11] The Surface Transportation Extension Act of 2010 (P.L. 111-148, March 18, 2010)