

# Surface Transportation Reauthorization Arrives

## *What Are the Outcomes and the Prospects for Research?*

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On August 10, 2005, President George W. Bush signed into law the long-awaited surface transportation reauthorization legislation. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) provides \$286 billion in guaranteed spending for highway and transit programs. Among these are research and technology programs, most of which are contained in the research title, Title V.

The accompanying table lists the provisions in Title V, which cover the Federal Highway Administration's (FHWA) research, technology, training, and education programs; the Bureau of Transportation Statistics (BTS); Intelligent Transportation Systems (ITS) research and related activities; and most of the University Transportation Centers (UTC) program. Also included in the table are selected programs from the transit title. The table compares the funding in these programs with the funding for equivalent categories in the previous authorizing legislation, the Transportation Equity Act for the 21st Century (TEA-21).

The comparison uses multiyear totals and annual

averages, because TEA-21 authorized 6 years of funding, but SAFETEA-LU authorizes 5 years of funding for continuing programs. Multiyear total funding is shown for the new programs, most of which begin in the second year of the 5-year bill, Fiscal Year (FY) 2006, and continue for 4 years. Some programs are funded for less than 4 years, and several have subcategories or suballocations not shown in the table.<sup>1</sup> A comparison of equivalent categories shows that funding under SAFETEA-LU has increased by 36 percent, which is roughly equivalent to the increase in total funding for highway programs.

### Integrating Research and Deployment

In TEA-21, surface transportation research and technology deployment were the categories that generally represented FHWA-administered programs. In SAFETEA-LU these categories are combined to form the Surface Transportation Research, Development, and Deployment (STRDD) program.

Combining research and deployment was a strategy in the Administration's original proposal, to integrate the activities more closely. The strategy is reflected in several program areas—for example, Innovative Bridge Research and Deployment, Innovative Pavement Research and Deployment, and Safety Innovative Deployment.

### New Programs and Earmarks

Many new programs are funded through STRDD—for example, a Long-Term Bridge Performance program, fashioned after the Long-Term Pavement Performance (LTPP) program drawing to a close under the current authorization. SAFETEA-LU also authorizes several new cooperative research programs: in environment and planning, in freight, and in hazardous materials. A second strategic highway research program, SHRP II, is funded for 4 years.

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President George W. Bush signs the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, August 10, at the Caterpillar-Aurora Facility, Montgomery, Illinois.

<sup>1</sup> Detailed tables of the year-by-year funding for highway and transit research can be found via TRB's home page, [www.TRB.org](http://www.TRB.org).

**TABLE 1 Multiyear Totals and Annual Averages for Research: TEA-21 and SAFETEA-LU\***

Programs from Title V Research	Multiyear Totals			Annual Averages		
	TEA-21 <sup>a</sup>	SAFETEA-LU	Delta	TEA-21	SAFETEA-LU	Delta
<b>STR + TD for TEA-21; STRDD for SAFETEA-LU <sup>b</sup></b>	<b>\$842,000,000</b>	<b>\$982,000,000</b>	<b>17%</b>	<b>\$140,333,333</b>	<b>\$196,400,000</b>	<b>40%</b>
<b>Surface Transportation Research</b>	<b>592,000,000</b>					
Long-Term Pavement Performance <sup>c</sup>	60,000,000	50,600,000	-16%	10,000,000	10,120,000	1%
Seismic Research	12,000,000	12,500,000	4%	2,000,000	2,500,000	25%
International Transportation Outreach	3,000,000	1,500,000	-50%	500,000	300,000	-40%
Surface Transportation Environment and Planning Cooperative Research Program	no funds specified	67,500,000				
Exploratory Advanced Research	no funds specified	70,000,000				
Transportation Technology Innovation	22,000,000	26,000,000	18%	3,666,667	5,200,000	42%
Centers for Surface Transportation Excellence		15,000,000				
Long-Term Bridge Performance		31,000,000				
Advanced Travel Forecasting Procedures		10,500,000				
National Cooperative Freight Research		15,000,000				
Future Strategic Highway Research Program		205,000,000				
Transportation Safety Information Management System		2,000,000				
Surface Transportation Congestion Relief Solutions		36,000,000				
Commercial Remote Sensing Products and Spatial Information Technologies		31,000,000				
Motor Carrier Efficiency Study		5,000,000				
Center for Transportation Advancement and Regional Development		2,500,000				
Hazardous Materials Research Projects		5,000,000				
Biobased Transportation Research		50,000,000				
Motorcycle Crash Causation		2,816,000				
Research Grants		76,500,000				
<b>Technology Deployment</b>	<b>\$250,000,000</b>					
Innovative Bridge Research and Deployment <sup>d</sup>	108,000,000	65,500,000	-39%	18,000,000	13,100,000	-27%
High-Performance Concrete Bridge		16,500,000				
Innovative Pavement Research and Deployment Program		90,500,000				
Demonstration of Ultra-High-Performance Concrete with Ductility		2,500,000				
High-Performance Steel Bridge		16,400,000				
Steel Bridge Testing		5,000,000				
Safety Innovative Deployment		51,000,000				
Demonstration Projects and Studies		13,300,000				

Programs from Title V Research	Multiyear Totals			Annual Averages		
	TEA-21 <sup>a</sup>	SAFETEA-LU	Delta	TEA-21	SAFETEA-LU	Delta
<b>Training and Education</b>	<b>\$102,000,000</b>	<b>\$133,500,000</b>	<b>31%</b>	<b>\$17,000,000</b>	<b>\$26,700,000</b>	<b>57%</b>
National Highway Institute	39,000,000	48,000,000	23%	6,500,000	9,600,000	48%
Local Technical Assistance Program	51,000,000	55,500,000	9%	8,500,000	11,100,000	31%
Eisenhower Fellowships	12,000,000	11,000,000	-8%	2,000,000	2,200,000	10%
Garrett Morgan Program		5,000,000				
Freight Planning Capacity Building		3,500,000				
Surface Transportation Congestion Relief Assistance and Training		3,000,000				
Transportation Education Development		7,500,000				
<b>Bureau of Transportation Statistics</b>	<b>\$186,000,000</b>	<b>\$135,000,000</b>	<b>-27%</b>	<b>\$31,000,000</b>	<b>\$27,000,000</b>	<b>-13%</b>
Ferry Database		2,000,000				
<b>Intelligent Transportation Systems (ITS) Standards, Research, Testing, and Development</b>	<b>\$603,200,000</b>	<b>\$550,000,000</b>	<b>-9%</b>	<b>\$100,533,333</b>	<b>\$110,000,000</b>	<b>9%</b>
Commercial Vehicle ITS Infrastructure <sup>e</sup>	184,100,000	[100,000,000]				
Multistate Corridor Operations and Management		35,000,000				
Rural Interstate Corridor Communications Study		3,000,000				
Road Weather Research and Development		20,000,000				
<b>ITS Deployment <sup>f</sup></b>	<b>\$679,000,000</b>	<b>\$122,000,000</b>				
<b>University Transportation Research</b>	<b>\$158,800,000</b>	<b>\$348,500,000</b>	<b>119%</b>	<b>\$26,466,667</b>	<b>\$69,700,000</b>	<b>163%</b>
<b>Totals, Research Title Only <sup>f</sup></b>	<b>\$1,892,000,000</b>	<b>\$2,149,000,000</b>	<b>14%</b>	<b>\$315,333,333</b>	<b>\$429,800,000</b>	<b>36%</b>
<b>Programs from Title III Public Transportation</b>						
<b>Transit (FTA)</b>						
Transit Cooperative Research Program	45,250,000	46,084,000	2%	7,541,667	9,216,800	22%
National Transit Institute	23,000,000	18,192,000	-21%	3,833,333	3,638,400	-5%
University Transportation Centers (UTC): Transit Portion	36,000,000	33,952,000	-6%	6,000,000	6,790,400	13%
<b>Total UTC Funding (Highway + Transit)</b>	<b>194,800,000</b>	<b>382,452,000</b>	<b>96%</b>	<b>32,466,667</b>	<b>76,490,400</b>	<b>136%</b>
<p>* 6-year totals for TEA-21; 5-year totals for SAFETEA-LU.</p> <p><sup>a</sup> TEA-21 funding amounts do not reflect obligation limits. Programs that did not receive contract authority are not included.</p> <p><sup>b</sup> STR = Surface Transportation Research; TD = Technology Deployment; STRDD = Surface Transportation Research, Development, and Deployment. In TEA-21, STR and TD were separate programs; SAFETEA-LU combines the programs as STRDD. Funding for STR plus TD is shown in the top row for comparison with STRDD.</p> <p><sup>c</sup> Indentation indicates suballocation of funds.</p> <p><sup>d</sup> Funding for the Innovative Bridge Research and Deployment Program in SAFETEA-LU is compared with the sum of funding amounts for the Research and Construction components of the Innovative Bridge Program in TEA-21.</p> <p><sup>e</sup> Commercial Vehicle ITS funding is provided in the Motor Carrier Safety title of SAFETEA-LU (Title IV), not in the research title; funding for this program is shown for comparison with TEA-21.</p> <p><sup>f</sup> ITS Deployment was moved out of the research title in SAFETEA-LU, except in FY 2005. ITS Deployment is not included in the totals for TEA-21 or SAFETEA-LU.</p>						

## Reauthorization Arrives

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The STRDD program includes a nearly threefold increase in projects earmarked for particular research institutions or for programs to be administered outside of FHWA through the National Academy of Sciences. Four program areas listed in the table—Biobased Transportation Research, Research Grants, Demonstration Projects and Studies, and Transportation Technology Innovation—are collections of earmarks, predominantly to universities, but also to one federal laboratory and several private institutions.

## Training and Education and BTS

The Training and Education category covers traditional programs, such as the National Highway Institute (NHI), the Local Technical Assistance Program (LTAP), and the Eisenhower Fellowships for students studying transportation. Each of these programs receives some increase in annual funding—the NHI increase is nearly 50 percent.

Several new training and education programs also are authorized, but with modest annual funding: the Garrett A. Morgan program to encourage women and minority students to enter transportation, a freight capacity building program, a training component for the congestion relief research program authorized under STRDD, and the Transportation Education Development pilot program to develop transportation curricula.

Annual program funding for the Bureau of Transportation Statistics (BTS) falls by 13 percent from the levels in TEA-21. The future of the National Transportation Library had been uncertain for the past 2 years, but the library has been reauthorized. BTS is required to fund a ferry database authorized in Title I of SAFETEA-LU.

## ITS and UTC Programs

The ITS Standards, Research, Testing, and Development category receives a modest increase of 9 percent in annual average funding compared with TEA-21 levels. A new program of road weather research is authorized, as well as a program of grants to states in the Interstate 95 corridor. The Commercial Vehicle ITS Infrastructure program is authorized, with funding provided in the Motor Carrier Safety title, not in the research title.

ITS Deployment has been phased out as a distinct funding category. SAFETEA-LU, however, includes funds for ITS Deployment in FY 2005 that already were allocated in the transportation appropriations act.

The UTC program receives the greatest increases in funding over TEA-21 levels. The research title provides most of the program's funding from the highway

account of the Highway Trust Fund. A smaller amount is provided in the transit title, mostly from the general fund of the U.S. Treasury. The table combines both sources of UTC funding to show an average annual increase of 136 percent over TEA-21 levels.

The UTC program is divided into four categories of centers: national, regional, Tier 1, and Tier 2. A total of 62 centers receive earmarks, some only for the first or second year of the authorization period, others for most or all of the period. Starting with FY 2007, 20 centers are open for competition. In total, 75 percent of the funding already is earmarked for centers.

## Transit Programs

The Transit Cooperative Research Program receives a slightly more than 20 percent increase in annual average funding over TEA-21. The National Transit Institute experiences a small decrease.

These programs are part of a larger transit research and technology program not shown in the table. The larger program receives average annual funding of almost \$62 million, from which approximately 25 specific programs or projects are funded; 40 percent of the funds is earmarked for particular recipients.

Title IV of SAFETEA-LU authorizes motor carrier research and development, but no funding is specified.

## Opportunities and Challenges

SAFETEA-LU provides many opportunities to advance knowledge and innovation in surface transportation. New programs in diverse areas—such as hazardous materials, weather effects on roads, and biobased transportation—will expand traditional definitions of surface transportation research.

At the same time, SAFETEA-LU poses challenges to the transportation research community. The funding amounts presented here are theoretical maximums—that is, the actual funding will be subject to obligation ceilings and to possible cutbacks because the sum of all the designations under STRDD exceeds the funds provided in some years.

SAFETEA-LU calls for coordination and strategic planning for research, which will involve the cooperation of an array of research funding recipients, inside and outside the federal government, under the leadership of the U.S. Department of Transportation. SAFETEA-LU also calls for outcome-based performance evaluation of federally funded research—a goal that has challenged researchers in all fields.

Research and technology have gained an unusually high profile in the reauthorization process. Accountability and quality in carrying out SAFETEA-LU's investment in research will be critical to the success of research and innovation in the next reauthorization—which is not that far away.