

Union Calendar No. 318

105TH CONGRESS
2^D Session

H. R. 860

[Report No. 105-503, Part I]

A BILL

To authorize appropriations to the Department of Transportation for surface transportation research and development, and for other purposes.

JUNE 3, 1998

The Committees on Commerce and Transportation and Infrastructure discharged; committed to the Committee on the State of the Union, and ordered to be printed

Union Calendar No. 318

105TH CONGRESS
2^D SESSION

H. R. 860

[Report No. 105–503, Part I]

To authorize appropriations to the Department of Transportation for surface transportation research and development, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 27, 1997

Mrs. MORELLA (for herself and Mr. BROWN of California) introduced the following bill; which was referred to the Committee on Science

APRIL 29, 1998

Reported with an amendment and referred to the Committees on Commerce and Transportation and Infrastructure for a period ending not later than June 2, 1998 for consideration of such provisions of the bill and amendment reported from the Committee on Science as fall within their jurisdiction pursuant to clause 1(e) and (q) of rule X, respectively

[Strike out all after the enacting clause and insert the part printed in *italie*]

JUNE 2, 1998

Referral to the Committees on Commerce and Transportation and Infrastructure extended for a period ending not later than June 3, 1998

JUNE 3, 1998

Additional sponsors: Mr. FORBES, Ms. EDDIE BERNICE JOHNSON of Texas, and Ms. STABENOW

JUNE 3, 1998

The Committees on Commerce and Transportation and Infrastructure discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed

A BILL

To authorize appropriations to the Department of Transportation for surface transportation research and development, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
 2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) *SHORT TITLE.*—*This Act may be cited as the*
 5 *“Surface Transportation Research and Development Act of*
 6 *1997”.*

7 (b) *TABLE OF CONTENTS.*—

Sec. 1. Short title; table of contents.

Sec. 2. Purposes.

Sec. 3. Limitations.

Sec. 4. Notice.

Sec. 5. Sense of Congress on the year 2000 problem.

TITLE VI—RESEARCH

Subtitle A—Programs and Activities

Sec. 6001. Transportation research and technology development.

Sec. 6002. Surface transportation research and technology development program.

Sec. 6003. Statistics research.

Sec. 6004. Applied research and technology utilization program.

Sec. 6005. Technology transfer and technology partnerships.

Sec. 6006. Long-term pavement performance and advanced research.

Sec. 6007. State research.

Sec. 6008. Minimum expenditures on long-term research projects.

Sec. 6009. Authorization of appropriations.

Subtitle B—Intelligent Transportation Systems

Sec. 6021. Short title amendment.

Sec. 6022. Establishment and scope of program.

Sec. 6023. General authorities and requirements.

Sec. 6024. Strategic plan, implementation, and report to Congress.

Sec. 6025. Technical, planning, and operational testing project assistance.

Sec. 6026. Applications of technology.

Sec. 6027. Funding.

Sec. 6028. Definitions.

1 **SEC. 2. PURPOSES.**

2 *The purposes of this Act are—*

3 *(1) to promote an inclusive approach to surface*
4 *transportation research and development by requiring*
5 *a multimodal focus, facilitating cooperation among*
6 *industry, institutions of higher education, and gov-*
7 *ernment, and increasing coordination between Fed-*
8 *eral and State research organizations;*

9 *(2) to promote high standards in research, devel-*
10 *opment, and technology utilization through merit re-*
11 *view, competitive awards, enhanced technology trans-*
12 *fer, accelerated standards development, and better un-*
13 *derstanding of and increased use of life cycle costing*
14 *of projects;*

15 *(3) to strengthen basic and longer term transpor-*
16 *tation research efforts and strengthen the role of insti-*
17 *tutions of higher education in those programs;*

18 *(4) to strengthen the efforts of the Department of*
19 *Transportation at strategic and long-range planning,*
20 *and to streamline data collection, measurement of re-*
21 *search results, and utilization of research results by*
22 *others; and*

23 *(5) to enhance the impact of transportation re-*
24 *search and development by ensuring the consideration*

1 *of safety, the efficient movement of people and goods,*
2 *the environment, and life cycle cost savings of trans-*
3 *portation decisions.*

4 **SEC. 3. LIMITATIONS.**

5 (a) *PROHIBITION OF LOBBYING ACTIVITIES.*—No
6 *funds appropriated to the Secretary of Transportation shall*
7 *be available for any activity whose purpose is to influence*
8 *any pending Federal, State, or local legislation, except that*
9 *this subsection shall not prevent officers or employees of the*
10 *United States or of its departments or agencies from com-*
11 *municating to Members of Congress on the request of any*
12 *Member or to Congress, through the proper channels, re-*
13 *quests for legislation or appropriations which they deem*
14 *necessary for the efficient conduct of the public business.*
15 *Nothing in this subsection shall prohibit officers or employ-*
16 *ees of the United States or its departments or agencies from*
17 *testifying before any Federal, State, or local legislative body*
18 *upon the invitation of such legislative body.*

19 (b) *LIMITATION ON APPROPRIATIONS.*—No sums are
20 *authorized to be appropriated to the Secretary of Transpor-*
21 *tation for fiscal years 1998, 1999, and 2000 for the purposes*
22 *for which sums are authorized by this Act and the amend-*
23 *ments made by this Act, unless such sums are specifically*
24 *authorized to be appropriated by this Act or the amend-*
25 *ments made by this Act.*

1 (c) *ELIGIBILITY FOR AWARDS.*—

2 (1) *IN GENERAL.*—*The Secretary of Transpor-*
3 *tation shall exclude from consideration for grant*
4 *agreements made by the Department of Transpor-*
5 *tation after fiscal year 1997 any person who received*
6 *funds, other than those described in paragraph (2),*
7 *appropriated for a fiscal year after fiscal year 1997,*
8 *under a grant agreement from any Federal funding*
9 *source for a project that was not subjected to a com-*
10 *petitive, merit-based award process. Any exclusion*
11 *from consideration pursuant to this subsection shall*
12 *be effective for a period of 5 years after the person*
13 *receives such Federal funds.*

14 (2) *EXCEPTION.*—*Paragraph (1) shall not apply*
15 *to the receipt of Federal funds by a person due to the*
16 *membership of that person in a class specified by law*
17 *for which assistance is awarded to members of the*
18 *class according to a formula provided by law.*

19 (3) *DEFINITION.*—*For purposes of this sub-*
20 *section, the term “grant agreement” means a legal in-*
21 *strument whose principal purpose is to transfer a*
22 *thing of value to the recipient to carry out a public*
23 *purpose of support or stimulation authorized by a*
24 *law of the United States, and does not include the ac-*
25 *quisition (by purchase, lease, or barter) of property or*

1 *services for the direct benefit or use of the United*
2 *States Government. Such term does not include a co-*
3 *operative agreement (as such term is used in section*
4 *6305 of title 31, United States Code) or a cooperative*
5 *research and development agreement (as such term is*
6 *defined in section 12(d)(1) of the Stevenson-Wydler*
7 *Technology Innovation Act of 1980 (15 U.S.C.*
8 *3710a(d)(1))).*

9 **SEC. 4. NOTICE.**

10 *(a) NOTICE OF REPROGRAMMING.—If any funds au-*
11 *thorized by this Act or the amendments made by this Act*
12 *are subject to a reprogramming action that requires notice*
13 *to be provided to the Appropriations Committees of the*
14 *House of Representatives and the Senate, notice of such ac-*
15 *tion shall concurrently be provided to the Committees on*
16 *Science and Transportation and Infrastructure of the*
17 *House of Representatives and the Committee on Commerce,*
18 *Science, and Transportation of the Senate.*

19 *(b) NOTICE OF REORGANIZATION.—The Secretary of*
20 *Transportation shall provide notice to the Committees on*
21 *Science, Transportation and Infrastructure, and Appro-*
22 *priations of the House of Representatives, and the Commit-*
23 *tees on Commerce, Science, and Transportation and Appro-*
24 *priations of the Senate, not later than 15 days before any*
25 *major reorganization of any program, project, or activity*

1 *of the Department of Transportation for which funds are*
2 *authorized by this Act or the amendments made by this Act.*

3 **SEC. 5. SENSE OF CONGRESS ON THE YEAR 2000 PROBLEM.**

4 *With the year 2000 fast approaching, it is the sense*
5 *of Congress that the Department of Transportation*
6 *should—*

7 *(1) give high priority to correcting all 2-digit*
8 *date-related problems in its computer systems to en-*
9 *sure that those systems continue to operate effectively*
10 *in the year 2000 and beyond;*

11 *(2) assess immediately the extent of the risk to*
12 *the operations of the Department of Transportation*
13 *posed by the problems referred to in paragraph (1),*
14 *and plan and budget for achieving Year 2000 compli-*
15 *ance for all of its mission-critical systems; and*

16 *(3) develop contingency plans for those systems*
17 *that the Department of Transportation is unable to*
18 *correct in time.*

1 ***TITLE VI—RESEARCH***
 2 ***Subtitle A—Programs and***
 3 ***Activities***

4 ***SEC. 6001. TRANSPORTATION RESEARCH AND TECHNOLOGY***
 5 ***DEVELOPMENT.***

6 (a) *RESEARCH AND TECHNOLOGY DEVELOPMENT.*—
 7 *Subtitle III of title 49, United States Code, is amended by*
 8 *adding at the end the following new chapter:*

9 ***“CHAPTER 61—RESEARCH AND***
 10 ***TECHNOLOGY DEVELOPMENT***

“SUBCHAPTER I—GENERAL AND ADMINISTRATIVE

“Sec.

“6101. Authority for research and technology development program.

“6102. Transactional authority.

“6103. Definitions.

“SUBCHAPTER II—PLANNING

“6121. Planning.

“6122. Implementation.

“6123. Surface transportation research and technology development plan.

“6124. Merit review and performance measurement.

“6125. Governmental procedures.

“6126. Role of Deputy Secretary.

“6127. Funding.

“SUBCHAPTER III—UNIVERSITY RESEARCH

“6131. University research in general.

“6132. National university transportation centers.

“6133. Research grants program involving undergraduate students.

“6134. Authorization of appropriations.

“SUBCHAPTER IV—COMMUNITY AND ENVIRONMENTAL IMPACT
 RESEARCH

“6141. Community and Environmental Impact Research Program.

“6142. Transportation-Environment Cooperative Research Program.

1 “SUBCHAPTER I—GENERAL AND
2 ADMINISTRATIVE

3 **“§ 6101. Authority for research and technology devel-**
4 **opment program**

5 *“The Secretary of Transportation is authorized to*
6 *carry out a program of research and technology develop-*
7 *ment activities in support of the Department’s mission.*
8 *Such activities shall be carried out in accordance with the*
9 *plan developed under section 6123, and shall include—*

10 *“(1) strategic planning and policy analysis, in-*
11 *cluding State planning and research;*

12 *“(2) research and technology development;*

13 *“(3) collection, analysis, and dissemination of*
14 *research data and results;*

15 *“(4) systems engineering and systems assess-*
16 *ments;*

17 *“(5) technology demonstrations and operational*
18 *tests; and*

19 *“(6) technology transfer and skills development.*

20 **“§ 6102. Transactional authority**

21 *“To carry out the activities described in section 6101,*
22 *the Secretary of Transportation may enter into contracts,*
23 *grants, and cooperative agreements with any public or pri-*
24 *vate sector entity.*

1 **“§ 6103. Definitions**

2 “For purposes of this chapter—

3 “(1) the term ‘institution of higher education’
4 has the meaning given that term in section 1201 of
5 the Higher Education Act of 1965; and

6 “(2) the term ‘operating administrations’ means
7 the Administrations that are components of the De-
8 partment of Transportation, and the Bureau of
9 Transportation Statistics.

10 **“SUBCHAPTER II—PLANNING**

11 **“§ 6121. Planning**

12 “The Secretary of Transportation shall—

13 “(1) establish a strategic planning process, con-
14 sistent with section 306 of title 5, United States Code,
15 for the Department of Transportation to determine
16 national transportation research and technology de-
17 velopment priorities;

18 “(2) coordinate Federal transportation research
19 and technology development activities; and

20 “(3) measure the results of those activities and
21 how they impact the performance of the national
22 transportation system.

23 **“§ 6122. Implementation**

24 “In implementing section 6121, the Secretary of
25 Transportation shall—

1 “(1) provide for the integrated planning, coordi-
2 nation, and consultation among the operating admin-
3 istrations, all other Federal agencies with responsibil-
4 ity for transportation research and technology devel-
5 opment, State and local governments, institutions of
6 higher education, industry, and other private and
7 public sector organizations engaged in transportation-
8 related research and development activities;

9 “(2) ensure that the Department’s research and
10 technology development programs do not duplicate
11 other Federal, State, or private sector research and
12 development programs;

13 “(3) develop and implement methods for evaluat-
14 ing the comparative utility, life cycle costs, and envi-
15 ronmental and social impacts of various transpor-
16 tation alternatives; and

17 “(4) provide for independent validation of the
18 scientific and technical assumptions underlying the
19 Department’s research and technology development
20 plans.

21 **“§ 6123. Surface transportation research and tech-**
22 **nology development plan**

23 “(a) DEVELOPMENT.—In implementing section 6121,
24 the Secretary of Transportation shall develop an integrated

1 *surface transportation research and technology development*
2 *plan (in this section referred to as the ‘plan’).*

3 “(b) *CONTENTS.—The plan shall include—*

4 “(1) *an identification of the general goals and*
5 *objectives of the Department of Transportation for*
6 *surface transportation, including—*

7 “(A) *enhancement of advanced and long-*
8 *term research and technology development;*

9 “(B) *development of a seamless transpor-*
10 *tation system by integrating transportation*
11 *modes; and*

12 “(C) *enhancement of the role of universities*
13 *in surface transportation research and tech-*
14 *nology development and technology transfer;*

15 “(2) *a description of the roles of the Department*
16 *of Transportation and other Federal agencies in*
17 *achieving the goals identified under paragraph (1), in*
18 *order to avoid unnecessary duplication of effort;*

19 “(3) *a description of the roles of each Federal*
20 *agency in—*

21 “(A) *collecting, assessing, and disseminat-*
22 *ing research and technology development results*
23 *from other countries that are relevant to surface*
24 *transportation; and*

1 “(B) analyzing and applying research and
2 technology development from other fields and in-
3 dustries that may have applications for the sur-
4 face transportation sector;

5 “(4) a description of the Department’s overall
6 strategy, and the role of each of the operating admin-
7 istrations in carrying out the plan over the next 5
8 years including a description of procedures for coordi-
9 nation of its efforts with the other operating adminis-
10 trations and with other Federal agencies;

11 “(5) an assessment of how State and local re-
12 search and technology development activities are con-
13 tributing to the achievement of the goals identified
14 under paragraph (1);

15 “(6) details of the Department’s surface trans-
16 portation research and technology development pro-
17 grams, including performance goals, resources needed
18 to achieve those goals, and performance indicators as
19 described in section 1115(a) of title 31, United States
20 Code, for the next 5 years for each area of research
21 and technology development;

22 “(7) significant comments on the plan and its
23 contents obtained from outside sources; and

24 “(8) responses to significant comments obtained
25 from the National Research Council and other advi-

1 sory bodies, and a description of any corrective ac-
2 tions taken pursuant thereto.

3 “(c) *COOPERATION WITH INDUSTRY.*—A primary
4 component of the plan shall be cooperation with industry
5 in carrying out this chapter and strengthening the manu-
6 facturing capabilities of United States firms in order to
7 produce products for transportation systems.

8 “(d) *NATIONAL RESEARCH COUNCIL REVIEW.*—The
9 Secretary shall enter into an agreement for the review by
10 the National Research Council of the details of each—

11 “(1) *strategic plan or revision required under*
12 *section 306 of title 5, United States Code;*

13 “(2) *performance plan required under section*
14 *1115 of title 31, United States Code; and*

15 “(3) *program performance report required under*
16 *section 1116 of title 31, United States Code,*
17 *with respect to surface transportation research and tech-*
18 *nology development.*

19 “(e) *STRATEGIC PLAN.*—

20 “(1) *INITIAL TRANSMITTAL.*—Within 1 year after
21 the date of the enactment of the Surface Transpor-
22 tation Research and Development Act of 1997, the
23 Secretary shall transmit to the Director of the Office
24 of Management and Budget and to the Congress a
25 strategic plan as described in section 306(a) of title

1 5, United States Code, which shall include the plan
2 developed under this section.

3 “(2) *UPDATE AND REVISION.*—The strategic plan
4 transmitted under paragraph (1) shall be updated
5 and revised, as required by section 306(b) of title 5,
6 United States Code, in coordination with other up-
7 dating and revision by the Department under such
8 section 306(b).

9 “(f) *PERFORMANCE PLANS AND REPORTS.*—In com-
10 plying with sections 1115 and 1116 of title 31, United
11 States Code, the Secretary shall include—

12 “(1) a summary of the results for the previous
13 fiscal year of surface transportation research and
14 technology development programs to which the De-
15 partment of Transportation contributes, along with—

16 “(A) an analysis of the relationship between
17 those results and the goals identified under sub-
18 section (b)(1); and

19 “(B) a description of the methodology used
20 for assessing the results;

21 “(2) a description of significant surface trans-
22 portation research and technology development initia-
23 tives, if any, undertaken during the previous fiscal
24 year which were not in the plan developed under sub-

1 *section (a), and any significant changes in the plan*
2 *from the previous year’s plan; and*

3 *“(3) a list of all surface transportation research*
4 *and technology development grants, contracts, and co-*
5 *operative agreements entered into by the Department*
6 *of Transportation that were not competitively award-*
7 *ed on the basis of merit review.*

8 **“§ 6124. Merit review and performance measurement**

9 *“The Secretary of Transportation shall, within one*
10 *year after the date of the enactment of the Surface Trans-*
11 *portation Research and Development Act of 1997, transmit*
12 *to the Congress a report describing competitive merit review*
13 *procedures for research and technology development, and*
14 *performance measurement procedures for research and tech-*
15 *nology development and demonstrations, developed in con-*
16 *sultation with the National Science Foundation and the*
17 *National Institute of Standards and Technology.*

18 **“§ 6125. Governmental procedures**

19 *“In implementing section 6121, the Secretary of*
20 *Transportation shall—*

21 *“(1) develop model procurement procedures that*
22 *encourage the use of advanced technologies; and*

23 *“(2) develop model transactions for carrying out*
24 *and coordinating Federal and State surface transpor-*
25 *tation research and technology development activities.*

1 **“§ 6126. Role of Deputy Secretary**

2 *“The implementation of this subchapter shall be co-*
 3 *ordinated through the Deputy Secretary of Transportation.*

4 **“§ 6127. Funding**

5 *“(a) AUTHORIZATIONS.—There is available from the*
 6 *Highway Trust Fund, other than the Mass Transit Account,*
 7 *for the Secretary of Transportation—*

8 *“(1) \$5,000,000 for fiscal year 1998;*

9 *“(2) \$5,000,000 for fiscal year 1999; and*

10 *“(3) \$5,000,000 for fiscal year 2000,*

11 *to carry out this subchapter.*

12 *“(b) AVAILABILITY OF FUNDS.—Funds authorized for*
 13 *carrying out this subchapter shall be available for obliga-*
 14 *tion in the same manner as if such funds were apportioned*
 15 *under chapter 1 of title 23, United States Code, and such*
 16 *funds shall remain available for obligation for a period of*
 17 *two years after the last day of the fiscal year for which*
 18 *such funds are made available under subsection (a).*

19 **“SUBCHAPTER III—UNIVERSITY RESEARCH**

20 **“§ 6131. University research in general**

21 *“(a) COORDINATION.—The Secretary of Transpor-*
 22 *tation, acting through the Deputy Secretary of Transpor-*
 23 *tation, shall coordinate the efforts of the Department to en-*
 24 *hance the role of institutions of higher education in trans-*
 25 *portation research and technology development and tech-*
 26 *nology transfer.*

1 “(b) *ASSISTANCE.—The Secretary may make grants to*
 2 *and enter into contracts and cooperative agreements with*
 3 *institutions of higher education to provide assistance as the*
 4 *Secretary considers necessary to carry out the Department’s*
 5 *research and technology development and technology trans-*
 6 *fer responsibilities and programs.*

7 “(c) *PROGRAM COORDINATION.—The Secretary*
 8 *shall—*

9 “(1) *provide for coordination of research and*
 10 *technology development and technology transfer ac-*
 11 *tivities that institutions of higher education carry out*
 12 *with funds provided directly or indirectly by the De-*
 13 *partment of Transportation;*

14 “(2) *provide for the dissemination of the results*
 15 *of activities described in paragraph (1), including, to*
 16 *the maximum extent practicable, dissemination*
 17 *through the National Technical Information Service;*
 18 *and*

19 “(3) *at least annually, consistent with the plan*
 20 *developed under section 6123, review and evaluate the*
 21 *priorities of such activities and their effectiveness in*
 22 *carrying out this section.*

23 **“§ 6132. National university transportation centers**

24 “(a) *REGIONALLY BASED CENTERS.—The Secretary of*
 25 *Transportation shall make grants to institutions of higher*

1 *education to establish and operate 1 university transpor-*
 2 *tation center in each of the 10 regions that comprise the*
 3 *Standard Federal Regional Boundary System.*

4 “(b) *OTHER CENTERS.*—*The Secretary may make*
 5 *grants to institutions of higher education to establish and*
 6 *operate up to 10 other university transportation centers to*
 7 *address transportation research, development, training,*
 8 *technology transfer, and policy issues designated by the Sec-*
 9 *retary, consistent with section 6101 and the plan developed*
 10 *under section 6123.*

11 “(c) *SELECTION CRITERIA.*—*An institution interested*
 12 *in receiving a grant under subsection (a) or (b) shall submit*
 13 *an application to the Secretary in the manner and contain-*
 14 *ing the information the Secretary prescribes. The Secretary*
 15 *shall select recipients through a competitive, independent,*
 16 *peer-reviewed process on the basis of—*

17 “(1) *the research and technology development re-*
 18 *sources available to the recipient to carry out this sec-*
 19 *tion;*

20 “(2) *the capability of the recipient to provide*
 21 *leadership in making national and regional contribu-*
 22 *tions to the solution of immediate and long-range*
 23 *transportation problems;*

24 “(3) *the recipient’s demonstrated ability to dis-*
 25 *seminate results of transportation research through a*

1 *statewide or regionwide technology transfer program;*
2 *and*

3 *“(4) the strategic plan the recipient proposes to*
4 *carry out under the grant.*

5 *“(d) OBJECTIVES.—Each university transportation*
6 *center established and operated under this section shall con-*
7 *duct—*

8 *“(1) competitively awarded, peer reviewed trans-*
9 *portation research;*

10 *“(2) an education program that includes multi-*
11 *disciplinary course work and participation in re-*
12 *search; and*

13 *“(3) an ongoing program of transportation tech-*
14 *nology transfer.*

15 *“(e) MAINTENANCE OF EFFORT.—As a condition of re-*
16 *ceiving a grant under subsection (a) or (b), the Secretary*
17 *shall require the recipient to agree to maintain total ex-*
18 *penditures from all sources, other than under this section,*
19 *for the university transportation center and related research*
20 *activities at a level at least equal to the average level of*
21 *expenditures for such activities in the 2 fiscal years prior*
22 *to award of the grant.*

23 *“(f) MATCHING REQUIREMENT.—A grant under sub-*
24 *section (a) or (b) shall not exceed 50 percent of the cost*
25 *of establishing and operating the university transportation*

1 center and related research activities the recipient carries
 2 out for the fiscal year or years for which the grant is made.

3 **“§6133. Research grants program involving under-**
 4 **graduate students**

5 “(a) *ESTABLISHMENT.*—The Secretary of Transpor-
 6 tation may establish a program for awarding grants to re-
 7 searchers at primarily undergraduate institutions who in-
 8 volve undergraduate students in research on subjects of rel-
 9 evance to transportation. Grants may be awarded under
 10 this section for—

11 “(1) research projects to be carried out at pri-
 12 marily undergraduate institutions; or

13 “(2) research projects that combine research at
 14 primarily undergraduate institutions with other re-
 15 search supported by the Department of Transpor-
 16 tation.

17 “(b) *NOTICE OF CRITERIA.*—Within 6 months after the
 18 date of the enactment of the Surface Transportation Re-
 19 search and Development Act of 1997, the Secretary shall
 20 establish and publish in the Federal Register criteria for
 21 the submittal of proposals for a grant under this section,
 22 and for the awarding of such grants.

23 “(c) *PRINCIPAL CRITERIA.*—The principal criteria for
 24 the awarding of grants under this section shall be—

1 “(1) *the relevance of the proposed research to the*
2 *plan developed under section 6123;*

3 “(2) *the scientific and technical merit of the pro-*
4 *posed research; and*

5 “(3) *the potential for participation by under-*
6 *graduate students in the proposed research.*

7 “(d) *COMPETITIVE, MERIT-BASED EVALUATION.—*
8 *Grants shall be awarded under this section on the basis of*
9 *evaluation of proposals through a competitive, merit-based*
10 *process.*

11 **“§ 6134. Authorization of appropriations**

12 “(a) *AUTHORIZATION.—There are authorized to be ap-*
13 *propriated, out of the Highway Trust Fund (other than the*
14 *Mass Transit Account), to the Secretary of Transpor-*
15 *tation—*

16 “(1) *\$20,000,000 for fiscal year 1998;*

17 “(2) *\$20,000,000 for fiscal year 1999; and*

18 “(3) *\$20,000,000 for fiscal year 2000,*

19 *for carrying out sections 6132 and 6133.*

20 “(b) *AVAILABILITY OF FUNDS.—Funds authorized for*
21 *carrying out sections 6132 and 6133 shall be available for*
22 *obligation in the same manner as if such funds were appor-*
23 *tioned under chapter 1 of title 23, United States Code, and*
24 *such funds shall remain available for obligation for a period*

1 of two years after the last day of the fiscal year for which
 2 such funds are made available under subsection (a).

3 “SUBCHAPTER IV—COMMUNITY AND
 4 ENVIRONMENTAL IMPACT RESEARCH

5 “§6141. **Community and Environmental Impact Re-**
 6 **search Program**

7 “(a) *ESTABLISHMENT.*—The Secretary of Transpor-
 8 tation shall establish a Community and Environmental Im-
 9 pact Research Program to assess the relationships between
 10 transportation modes, programs, and projects and their en-
 11 vironmental and community impacts. As appropriate, in
 12 carrying out the program, the Secretary shall consult with
 13 the Administrator of the Environmental Protection Agency,
 14 the Secretary of Energy, the Secretary of Housing and
 15 Urban Development, the Secretary of Health and Human
 16 Services, and the heads of other appropriate Federal depart-
 17 ments and agencies and shall maximize the involvement of
 18 State and local governments and metropolitan planning or-
 19 ganizations, United States colleges and universities, non-
 20 profit organizations and research institutes, and the private
 21 sector.

22 “(b) *RESEARCH.*—The program to be carried out
 23 under this section shall include research designed to—

24 “(1) develop transportation alternatives which
 25 improve mobility and access, and reduce negative im-

1 *pacts on communities and the environment of trans-*
2 *portation systems;*

3 “(2) *reduce emissions;*

4 “(3) *develop more accurate models for evaluating*
5 *alternative transportation control measures and alter-*
6 *native transportation system designs, including pe-*
7 *destrian and bicycle-related measures and system de-*
8 *signs which may reduce emissions, and are appro-*
9 *priate for use by metropolitan planning organizations*
10 *and State and local governments in designing imple-*
11 *mentation plans to meet air quality standards under*
12 *the Clean Air Act;*

13 “(4) *improve understanding of the factors that*
14 *contribute to the demand for transportation, includ-*
15 *ing transportation system design, demographic*
16 *change, and land use planning;*

17 “(5) *develop indicators of economic, social, and*
18 *environmental performance of transportation systems*
19 *to facilitate analysis of potential alternatives, with*
20 *respect to energy efficiency, crash-related deaths and*
21 *injuries, emission of pollutants, and transportation*
22 *delays;*

23 “(6) *develop more comprehensive information re-*
24 *garding the role of trails designed for pedestrians, bi-*
25 *cycles, and other nonmotorized transportation in fa-*

1 *cilitating accessibility, and mobility within commu-*
2 *nities; and*

3 *“(7) examine the effects on transportation de-*
4 *mand of the use of communications and other infor-*
5 *mation technologies.*

6 *“(c) GRANTS, COOPERATIVE AGREEMENTS, AND CON-*
7 *TRACTS.—The Secretary may make grants and enter into*
8 *cooperative agreements and contracts to carry out this sec-*
9 *tion. Awards shall be made on the basis of a competitive,*
10 *merit-based process.*

11 *“(d) INFORMATION CLEARINGHOUSE.—The Secretary*
12 *shall establish and maintain a repository for summary*
13 *data and results of federally sponsored projects carried out*
14 *pursuant to this section and shall make, upon request, such*
15 *information readily available to all users of the repository*
16 *at an appropriate cost.*

17 *“(e) FUNDING.—(1) There are authorized to be appro-*
18 *priated, out of the Highway Trust Fund (other than the*
19 *Mass Transit Account), \$6,000,000 for each of fiscal years*
20 *1998, 1999, and 2000 to carry out this section.*

21 *“(2) Funds authorized for carrying out this section*
22 *shall be available for obligation in the same manner as if*
23 *such funds were apportioned under chapter 1 of title 23,*
24 *United States Code, and such funds shall remain available*
25 *for obligation for a period of two years after the last day*

1 *of the fiscal year for which such funds are made available*
 2 *under paragraph (1).*

3 **“§ 6142. *Transportation-Environment Cooperative Re-***
 4 ***search Program***

5 “(a) *INDEPENDENT GOVERNING BOARD.*—

6 “(1) *ESTABLISHMENT.*—*The Secretary of Trans-*
 7 *portation, after consultation with the Secretary of*
 8 *Energy, the Administrator of the Environmental Pro-*
 9 *tection Agency, the Secretary of the Interior, the Sec-*
 10 *retary of Housing and Urban Development, and the*
 11 *Secretary of Health and Human Services, shall estab-*
 12 *lish and maintain an independent governing board to*
 13 *recommend environmental and energy conservation,*
 14 *technology, and technology transfer research projects*
 15 *related to transportation.*

16 “(2) *MEMBERSHIP.*—*The board shall include—*

17 “(A) *at least 15 persons who are not Fed-*
 18 *eral employees who collectively comprise an ap-*
 19 *propriate balance of representatives of State*
 20 *transportation and environmental agencies, envi-*
 21 *ronmental scientists and engineers, representa-*
 22 *tives of environmental organizations, and rep-*
 23 *resentatives of metropolitan planning organiza-*
 24 *tions and transit operating agencies; and*

25 “(B) *1 representative each from—*

1 “(i) the Department of Transportation;
2 “(ii) the Department of Energy;
3 “(iii) the Environmental Protection
4 Agency;
5 “(iv) the Department of the Interior;
6 and
7 “(v) the Department of Health and
8 Human Services.

9 *Members appointed under subparagraph (A) shall be*
10 *selected so as to maintain an appropriate geographic*
11 *balance among the members.*

12 “(3) *TRAVEL EXPENSES.*—*Each member of the*
13 *board shall receive travel expenses, including per*
14 *diem in lieu of subsistence, in accordance with sec-*
15 *tions 5702 and 5703 of title 5, United States Code.*

16 “(4) *NONAPPLICABILITY.*—*Section 14 of the Fed-*
17 *eral Advisory Committee Act shall not apply to the*
18 *board.*

19 “(b) *NATIONAL ACADEMY OF SCIENCES.*—*The Sec-*
20 *retary of Transportation shall enter into an agreement with*
21 *the National Academy of Sciences under which the National*
22 *Academy of Sciences will award grants, through a competi-*
23 *tive, merit-based, peer-reviewed process, for carrying out re-*
24 *search recommended by the independent governing board es-*
25 *tablished under subsection (a).*

1 “(c) *FUNDING.*—(1) *There are authorized to be appro-*
 2 *priated, out of the Highway Trust Fund (other than the*
 3 *Mass Transit Account), \$4,000,000 for each of fiscal years*
 4 *1998, 1999, and 2000 to carry out this section.*

5 “(2) *Funds authorized for carrying out this section*
 6 *shall be available for obligation in the same manner as if*
 7 *such funds were apportioned under chapter 1 of title 23,*
 8 *United States Code, and such funds shall remain available*
 9 *for obligation for a period of two years after the last day*
 10 *of the fiscal year for which such funds are made available*
 11 *under paragraph (1).”.*

12 (b) *CONFORMING AMENDMENTS.*—*The table of chapters*
 13 *of subtitle III of title 49, United States Code, is amended*
 14 *by adding at the end the following new item:*

“61. *RESEARCH AND TECHNOLOGY DEVELOPMENT* 6101”.

15 **SEC. 6002. SURFACE TRANSPORTATION RESEARCH AND**
 16 **TECHNOLOGY DEVELOPMENT PROGRAM.**

17 *Section 307 of title 23, United States Code, is amend-*
 18 *ed—*

19 (1) *in subsection (a)—*

20 (A) *by striking paragraph (1)(C);*

21 (B) *by adding at the end of paragraph (1)*
 22 *the following new subparagraphs:*

23 “(C) *TECHNOLOGICAL INNOVATION.*—*The*
 24 *programs and activities carried out under this*

1 *section shall be consistent with the plan devel-*
2 *oped under section 6123 of title 49.*

3 *“(D) FUNDS.—Of the amounts authorized*
4 *to be appropriated under section 6009(a) of the*
5 *Surface Transportation Research and Develop-*
6 *ment Act of 1997, not more than—*

7 *“(i) \$116,000,000 for fiscal year 1998;*

8 *“(ii) \$116,000,000 for fiscal year 1999;*

9 *and*

10 *“(iii) \$116,000,000 for fiscal year*

11 *2000,*

12 *and such funds as may be deposited by any co-*
13 *operating organization or person in a special ac-*
14 *count of the Treasury of the United States estab-*
15 *lished for such purposes, shall be available for*
16 *carrying out this subsection and subsection (b).*

17 *Such funds shall be available for obligation in*
18 *the same manner as if such funds were appor-*
19 *tioned under chapter 1 of this title, and such*
20 *funds shall remain available for obligation for a*
21 *period of three years after the last day of the fis-*
22 *cal year for which the funds are made avail-*
23 *able.”;*

1 (C) by striking “highway” in paragraph
2 (2)(A) and inserting in lieu thereof “surface
3 transportation”;

4 (D) by striking paragraph (3); and

5 (E) by redesignating paragraph (4) as
6 paragraph (3);

7 (2) by amending subsection (b) to read as fol-
8 lows:

9 “(b) *MANDATORY CONTENTS OF PROGRAM.*—*The sur-*
10 *face transportation research and technology development*
11 *programs of the Department of Transportation shall be con-*
12 *sistent with the plan developed under section 6123 of title*
13 *49, and shall include—*

14 “(1) *a coordinated long-term program of re-*
15 *search for the development, use, and dissemination of*
16 *performance indicators to measure the performance of*
17 *the surface transportation system of the United*
18 *States, including indicators for productivity, effi-*
19 *ciency, energy use, air quality, congestion, safety,*
20 *maintenance, and other factors which reflect the over-*
21 *all performance of such system; and*

22 “(2) *a program to strengthen and expand surface*
23 *transportation infrastructure research and technology*
24 *development, including—*

1 “(A) methods, materials, and testing to im-
2 prove the durability of surface transportation in-
3 frastructure facilities and extend the life of
4 bridge structures, including new and innovative
5 technologies to reduce corrosion and tests simu-
6 lating seismic activity, vibration, and weather;

7 “(B) a research and development program
8 directed toward the reduction of costs associated
9 with the construction of highways and mass
10 transit systems;

11 “(C) research on the use of recycled mate-
12 rials such as paper and plastic fiber reinforce-
13 ment systems;

14 “(D) research and development on the im-
15 plementation of new and innovative fuel tech-
16 nologies, including biodiesel fuel, that enable re-
17 cycled and renewable resources to be used as
18 transportation fuels;

19 “(E) a surface transportation research pro-
20 gram to develop evaluation equipment for infra-
21 structure facilities, including facilities that uti-
22 lize advanced materials;

23 “(F) information technology including—

24 “(i) appropriate computer programs to
25 collect and analyze data on the status of the

1 existing infrastructure facilities for enhanc-
2 ing management, growth, and capacity; and
3 “(ii) models of surface transportation
4 systems for—
5 “(I) predicting capacity, safety,
6 and infrastructure durability problems;
7 “(II) evaluating planned research
8 projects; and
9 “(III) testing the strengths and
10 weaknesses of proposed revisions in
11 surface transportation operations pro-
12 grams;
13 “(G) new innovative technologies to enhance
14 and facilitate field construction and rehabilita-
15 tion techniques for minimizing disruption dur-
16 ing repair and maintenance of structures; and
17 “(H) an increased understanding of the ex-
18 tent to which traditional contracting and speci-
19 fication practices impede innovation, and of the
20 role of alternative practices and incentives to
21 overcoming barriers to the utilization of ad-
22 vanced technologies and research results.”;
23 (3) by amending subsection (d) to read as fol-
24 lows:

1 “(d) *STUDY OF FUTURE STRATEGIC HIGHWAY RE-*
2 *SEARCH PROGRAM.*—

3 “(1) *STUDY.*—

4 “(A) *IN GENERAL.*—Not later than 120
5 *days after the date of enactment of this section,*
6 *the Secretary shall make a grant to, or enter into*
7 *a cooperative agreement or contract with, the*
8 *Transportation Research Board of the National*
9 *Academy of Sciences (referred to in this section*
10 *as the ‘Board’)* *to conduct a study to determine*
11 *the goals, purposes, research agenda and projects,*
12 *administrative structure, and fiscal needs for a*
13 *new strategic highway research program to re-*
14 *place the program established under section*
15 *307(d) (as in effect on the day before the date of*
16 *enactment of this section), or a similar effort.*

17 “(B) *CONSULTATION.*—In conducting the
18 *study, the Board shall consult with the American*
19 *Association of State Highway and Transpor-*
20 *tation Officials and such other entities as the*
21 *Board determines to be necessary to the conduct*
22 *of the study.*

23 “(2) *REPORT.*—Not later than 2 years after
24 *making a grant or entering into a cooperative agree-*
25 *ment or contract under subsection (a), the Board shall*

1 *submit a final report on the results of the study to the*
 2 *Secretary, the Committee on Environment and Public*
 3 *Works of the Senate, and the Committee on Science*
 4 *and the Committee on Transportation and Infrastruc-*
 5 *ture of the House of Representatives.”;*

6 *(4) by striking subsection (e);*

7 *(5) by redesignating subsections (f), (g), and (h)*
 8 *as subsections (e), (f), and (g), respectively;*

9 *(6) in subsection (e), as so redesignated by para-*
 10 *graph (5) of this section—*

11 *(A) by amending paragraph (1) to read as*
 12 *follows:*

13 *“(1) ESTABLISHMENT.—The Secretary shall es-*
 14 *tablish a program to study the vulnerability of the*
 15 *Federal-aid highway system and other surface trans-*
 16 *portation systems to seismic activity and to develop*
 17 *and implement cost-effective methods to reduce such*
 18 *vulnerability.”;*

19 *(B) by striking paragraphs (2), (4), and*
 20 *(5);*

21 *(C) by redesignating paragraph (3) as*
 22 *paragraph (2); and*

23 *(D) by adding at the end the following new*
 24 *paragraph:*

1 “(3) *AUTHORIZATION OF APPROPRIATIONS.—(A)*
 2 *Of the amounts authorized to be appropriated under*
 3 *section 6009(a) of the Surface Transportation Re-*
 4 *search and Development Act of 1997, not more*
 5 *than—*

6 “(i) \$2,000,000 for fiscal year 1998;

7 “(ii) \$2,000,000 for fiscal year 1999; and

8 “(iii) \$2,000,000 for fiscal year 2000,
 9 *shall be available for carrying out this subsection.*

10 “(B) *Funds authorized for carrying out this sub-*
 11 *section shall be available for obligation in the same*
 12 *manner as if such funds were apportioned under*
 13 *chapter 1 of this title, and such funds shall remain*
 14 *available for obligation for a period of three years*
 15 *after the last day of the fiscal year for which such*
 16 *funds are made available under subparagraph (A).”;*

17 *(7) in subsection (f), as so redesignated by para-*
 18 *graph (5) of this section, by inserting “DEFINITION.—*
 19 *” before “As used in”; and*

20 *(8) in subsection (g), as so redesignated by para-*
 21 *graph (5) of this section—*

22 *(A) by inserting “REPORTS.—” before “The*
 23 *Secretary shall”;*

1 (B) by inserting “and the Committee on
2 Science” after “Transportation and Infrastruc-
3 ture”; and

4 (C) by striking “1983” and inserting in
5 lieu thereof “1999”.

6 **SEC. 6003. STATISTICS RESEARCH.**

7 Section 111 of title 49, United States Code, is amended
8 by adding at the end the following new subsection:

9 “(h) *RESEARCH AND DEVELOPMENT GRANTS.*—The
10 Secretary may make grants to, or enter into cooperative
11 agreements or contracts with, public and nonprofit private
12 entities for—

13 “(1) the investigation of subjects listed in sub-
14 section (c)(1), and for research and development of
15 new methods of data collection, management, integra-
16 tion, dissemination, interpretation, and analysis;

17 “(2) development of electronic clearinghouses of
18 transportation data and related information; and

19 “(3) development and improvement of methods
20 for sharing geographic data.

21 There are authorized to be appropriated, out of the High-
22 way Trust Fund (other than the Mass Transit Account),
23 to the Secretary \$500,000 for each of the fiscal years 1998,
24 1999, and 2000 for carrying out this subsection. Such funds
25 shall be available for obligation in the same manner as if

1 *such funds were apportioned under chapter 1 of title 23,*
 2 *United States Code, and such funds shall remain available*
 3 *for obligation for a period of two years after the last day*
 4 *of the fiscal year for which the funds are made available.”.*

5 **SEC. 6004. APPLIED RESEARCH AND TECHNOLOGY UTILIZA-**
 6 **TION PROGRAM.**

7 (a) *AMENDMENT.—Section 326 of title 23, United*
 8 *States Code, is amended to read as follows:*

9 **“§326. Applied research and technology utilization**
 10 **program**

11 *“(a) IDENTIFICATION OF GOALS AND IMPLEMENTA-*
 12 *TION.—The Secretary shall, beginning 30 days after the*
 13 *transmittal of the plan developed under section 6123 of title*
 14 *49, identify the 3 highest priority applied research and*
 15 *technology utilization goals of the Department, consistent*
 16 *with that plan, and shall implement a program to achieve*
 17 *those goals. The Secretary shall give preference to projects*
 18 *that leverage Federal funds against significant resources*
 19 *from other sources, public or private.*

20 *“(b) FUNDING.—Funds authorized for carrying out*
 21 *this section shall be available for obligation in the same*
 22 *manner as if such funds were apportioned under chapter*
 23 *1 of this title, except that the Federal share of the cost of*
 24 *any activity under this section shall not exceed 50 percent,*
 25 *and such funds shall remain available for obligation for a*

1 *period of 3 years after the last day of the fiscal year for*
 2 *which the funds are appropriated.”.*

3 (b) *CONFORMING AMENDMENT.—The item relating to*
 4 *section 326 in the table of sections of chapter 3 of title 23,*
 5 *United States Code, is amended to read as follows:*

“326. Applied research and technology utilization program.”.

6 **SEC. 6005. TECHNOLOGY TRANSFER AND TECHNOLOGY**
 7 **PARTNERSHIPS.**

8 (a) *TECHNOLOGY TRANSFER AND TECHNOLOGY PART-*
 9 *NERSHIPS.—Chapter 3 of title 23, United States Code, is*
 10 *further amended by adding at the end the following new*
 11 *section:*

12 **“§ 327. Technology transfer and technology partner-**
 13 **ships**

14 *“(a) LOCAL TECHNICAL ASSISTANCE PROGRAM.—*

15 *“(1) AUTHORITY.—The Secretary shall carry out*
 16 *a transportation technology transfer program, which*
 17 *is consistent with the plan developed under section*
 18 *6123 of title 49, to provide access to modern highway*
 19 *technology to public authorities and the private sec-*
 20 *tor.*

21 *“(2) ASSISTANCE.—In carrying out paragraph*
 22 *(1), the Secretary may make grants and enter into*
 23 *contracts and cooperative agreements for technology*
 24 *transfer activities, technology assistance, and related*
 25 *support services that will—*

1 “(A) make research results and technology
2 available to assist public authorities and the pri-
3 vate sector to—

4 “(i) develop and expand their expertise
5 in highway technology (including pavement,
6 concrete, bridge, and safety management
7 systems) and in contracting practices which
8 favor the use, when cost effective on a life
9 cycle basis, of advanced products and tech-
10 nologies of innovative designs and construc-
11 tion techniques;

12 “(ii) improve highway and safety tech-
13 nology;

14 “(iii) enhance programs for the move-
15 ment of passengers and freight;

16 “(iv) promote intergovernmental trans-
17 portation planning, life cycle costing, and
18 project selection in a manner that incor-
19 porates state-of-the-art knowledge related to
20 land use planning, environmental protec-
21 tion, and preventive maintenance;

22 “(v) expand knowledge of implement-
23 ing life cycle cost assessment, including es-
24 tablishing the appropriate analysis period
25 and discount rates, learning how to value

1 *and properly consider user costs, determin-*
2 *ing tradeoffs between reconstruction and re-*
3 *habilitation, and establishing methodologies*
4 *for balancing higher initial costs of new*
5 *technologies and improved or advanced ma-*
6 *terials against lower maintenance costs;*

7 *“(vi) in conjunction with the National*
8 *Institute of Standards and Technology and*
9 *other appropriate organizations, develop*
10 *standardized estimates of useful life under*
11 *various conditions for advanced materials*
12 *of use in surface transportation; and*

13 *“(vii) deal effectively with road-related*
14 *problems by preparing and providing train-*
15 *ing packages, manuals, guidelines, and*
16 *technical resource materials;*

17 *“(B) identify, package, promote, and deliver*
18 *usable highway technology to local jurisdictions*
19 *to assist transportation agencies in developing*
20 *and expanding their ability to deal effectively*
21 *with road-related problems; and*

22 *“(C) operate, in cooperation with public au-*
23 *thorities and institutions of higher education,*
24 *technology transfer centers.*

1 “(3) *FEDERAL SHARE.*—Funds appropriated for
 2 *carrying out this subsection shall not exceed 50 per-*
 3 *cent of the cost of establishing and maintaining a*
 4 *technology transfer center described in paragraph*
 5 *(2)(C), except that in the case of a technology transfer*
 6 *center operated by or through an American Indian*
 7 *tribal government up to 100 percent of the costs may*
 8 *be provided pursuant to this subsection.*

9 “(4) *FUNDING.*—Funds authorized for carrying
 10 *out this subsection shall be available for obligation in*
 11 *the same manner as if such funds were apportioned*
 12 *under chapter 1 of this title, and such funds shall re-*
 13 *main available for obligation for a period of 3 years*
 14 *after the last day of the fiscal year for which the*
 15 *funds are appropriated.*

16 “(b) *DWIGHT DAVID EISENHOWER TRANSPORTATION*
 17 *FELLOWSHIP PROGRAM.*—

18 “(1) *GENERAL AUTHORITY.*—The Secretary may,
 19 *acting either independently or in cooperation with*
 20 *other Federal departments, agencies, and instrumen-*
 21 *talities, make grants for fellowships for any purpose*
 22 *for which research, technology development, or tech-*
 23 *nology transfer is authorized by this section.*

24 “(2) *IMPLEMENTATION.*—The Secretary shall im-
 25 *plement a transportation fellowship program for the*

1 *purpose of attracting qualified students to the field of*
 2 *transportation research. Such program shall be*
 3 *known as the ‘Dwight David Eisenhower Transpor-*
 4 *tation Fellowship Program’. The program shall offer*
 5 *fellowships to students at institutions of higher edu-*
 6 *cation. The recipients of the fellowships must be*
 7 *United States citizens.*

8 “(3) *FUNDING.—Funds authorized for carrying*
 9 *out this subsection shall be available for obligation in*
 10 *the same manner as if such funds were apportioned*
 11 *under chapter 1 of this title, and such funds shall re-*
 12 *main available for obligation for a period of one year*
 13 *after the last day of the fiscal year for which such*
 14 *funds are appropriated.*

15 “(c) *TECHNOLOGY PARTNERSHIPS.—*

16 “(1) *AUTHORITY.—In a manner consistent with*
 17 *the plan developed under section 6123 of title 49, the*
 18 *Secretary may make competitive grants, contracts,*
 19 *and cooperative agreements to or with States and,*
 20 *after peer review, to or with institutions of higher*
 21 *education, for the purpose of—*

22 “(A) *technology transfer and the further de-*
 23 *velopment and validation of the results of ap-*
 24 *plied research programs such as the Strategic*
 25 *Highway Research Program, including the*

1 *Superpave system, to establish a complete pro-*
 2 *gram that is well validated and implements per-*
 3 *formance prediction algorithms;*

4 *“(B) providing Federal leadership and sup-*
 5 *port in areas like initiation of regional tech-*
 6 *nology excellence centers, user-producer groups,*
 7 *Long-Term Pavement Performance product im-*
 8 *plementation, and technology access and ex-*
 9 *change programs; and*

10 *“(C) dissemination of information to States,*
 11 *academia, and industry.*

12 *“(2) FUNDING.—Funds authorized for carrying*
 13 *out this subsection shall be available for obligation in*
 14 *the same manner as if such funds were apportioned*
 15 *under chapter 1 of this title, and such funds shall re-*
 16 *main available for obligation for a period of 3 years*
 17 *after the last day of the fiscal year for which such*
 18 *funds are appropriated.”.*

19 *(b) NATIONAL HIGHWAY INSTITUTE.—Section 321 of*
 20 *title 23, United States Code, is amended—*

21 *(1) in subsection (a)(2), by striking “training*
 22 *programs of instruction for Federal Highway Admin-*
 23 *istration” and inserting in lieu thereof “education*
 24 *and training programs focusing on new and rapidly*

1 *changing surface transportation technologies for Fed-*
 2 *eral”;*

3 (2) *in subsection (a)(3), by striking “highway”*
 4 *and inserting in lieu thereof “surface transportation”;*

5 (3) *in subsection (b), by striking “highway de-*
 6 *partment” both places it appears and inserting in*
 7 *lieu thereof “transportation agency”;*

8 (4) *in subsection (c), by striking “highway em-*
 9 *ployees” and inserting in lieu thereof “transportation*
 10 *employees”;*

11 (5) *in subsection (d), by striking “, or any other*
 12 *person”;* and

13 (6) *in subsection (e)(4), by inserting at the end*
 14 *the following new sentence: “All fees collected under*
 15 *this subsection shall be used to defray costs associated*
 16 *with the development or administration of education*
 17 *and training programs authorized by this section.”.*

18 (c) *CONFORMING AMENDMENTS.—(1) The table of sec-*
 19 *tions of chapter 3 of title 23, United States Code, is amend-*
 20 *ed by adding at the end the following new item:*

“327. Technology transfer and technology partnerships.”.

21 (2) *Section 101(a) of title 23, United States Code, is*
 22 *amended by inserting after the undesignated paragraph re-*
 23 *lating to “Indian reservation roads” the following new*
 24 *paragraph:*

1 *“The term ‘institution of higher education’ has the*
 2 *meaning given that term in section 1201 of the Higher Edu-*
 3 *cation Act of 1965.”.*

4 *(3) Section 204(b) of title 23, United States Code, is*
 5 *amended by striking “section 326” and inserting in lieu*
 6 *thereof “section 327(a)”.*

7 **SEC. 6006. LONG-TERM PAVEMENT PERFORMANCE AND AD-**
 8 **VANCED RESEARCH.**

9 *(a) AMENDMENT.—Chapter 3 of title 23, United States*
 10 *Code, is further amended by adding at the end the following*
 11 *new section:*

12 **“§ 328. Long-term pavement performance and ad-**
 13 **vanced research**

14 *“(a) LONG-TERM PAVEMENT PERFORMANCE.—*

15 *“(1) CONTINUATION OF PROGRAM.—The Sec-*
 16 *retary of Transportation may make grants and enter*
 17 *into contracts and cooperative agreements for the con-*
 18 *tinuation of activities under the Long-Term Pave-*
 19 *ment Performance research program begun under the*
 20 *Strategic Highway Research Program.*

21 *“(2) FUNDING.—Funds authorized for carrying*
 22 *out this subsection shall remain available for obliga-*
 23 *tion for a period of three years after the last day of*
 24 *the fiscal year for which such funds are appropriated.*

25 *“(b) ADVANCED RESEARCH.—*

1 “(1) *AUTHORITY.*—*The Secretary shall establish*
2 *an advanced research program, which is consistent*
3 *with the plan developed under section 6123 of title 49,*
4 *to address longer-term, higher-risk research that shows*
5 *potential benefits for improving the durability, lon-*
6 *gevity, mobility, efficiency, environmental impact,*
7 *productivity, and safety of surface transportation sys-*
8 *tems. In carrying out such program, the Secretary*
9 *shall seek to develop partnerships with the public and*
10 *private sectors.*

11 “(2) *ACTIVITIES.*—*In carrying out paragraph*
12 *(1), the Secretary may make grants, and enter into*
13 *contracts and cooperative agreements, for—*

14 “(A) *characterization of the composition*
15 *and performance characteristics of basic con-*
16 *struction materials used in the infrastructure;*

17 “(B) *diagnostics for evaluation of the condi-*
18 *tion of surface transportation structures to en-*
19 *able the assessment of risks of failure from seis-*
20 *mic activity, vibration, and weather;*

21 “(C) *design and construction details for*
22 *composite structures;*

23 “(D) *safety research and technology develop-*
24 *ment;*

25 “(E) *environmental research;*

1 “(F) data acquisition and analysis tech-
 2 niques for system condition and performance
 3 monitoring; and

4 “(G) human factors research.

5 “(c) FUNDING.—Funds authorized for carrying out
 6 this section shall be available for obligation in the same
 7 manner as if such funds were apportioned under chapter
 8 1 of this title.”.

9 (b) CONFORMING AMENDMENT.—The table of sections
 10 of chapter 3 of title 23, United States Code, is amended
 11 by adding at the end the following new item:

“328. Long-term pavement performance and advanced research.”.

12 **SEC. 6007. STATE RESEARCH.**

13 Section 307(c) of title 23, United States Code, is
 14 amended—

15 (1) by inserting “and the evaluation and utiliza-
 16 tion of advanced materials, innovative construction
 17 techniques, and advanced technology” after “135 of
 18 this title” in paragraph (1)(B);

19 (2) by amending paragraph (2) to read as fol-
 20 lows:

21 “(2) MINIMUM EXPENDITURES ON RESEARCH,
 22 DEVELOPMENT, AND TECHNOLOGY TRANSFER ACTIVI-
 23 TIES.—Not less than 25 percent of the funds that are
 24 apportioned to a State for a fiscal year and are sub-
 25 ject to subsection (a) shall be expended by the State

1 *transportation agency for research, development, and*
 2 *technology transfer activities described in subsection*
 3 *(a) relating to surface transportation systems, in a*
 4 *manner that is consistent with the plan developed*
 5 *under section 6123 of title 49.”; and*

6 *(3) by adding at the end the following new para-*
 7 *graph:*

8 *“(5) ANNUAL REPORT.—Each State shall report*
 9 *annually to the Secretary on the level of its funding*
 10 *for activities described in paragraph (1)(E).”.*

11 **SEC. 6008. MINIMUM EXPENDITURES ON LONG-TERM RE-**
 12 **SEARCH PROJECTS.**

13 *(a) AMENDMENT.—Chapter 3 of title 23, United States*
 14 *Code, is further amended by adding at the end the following*
 15 *new section:*

16 **“§ 329. Minimum expenditures on long-term research**
 17 **projects**

18 *“Not less than 15 percent of the funds made available*
 19 *to the Secretary of Transportation under this title for re-*
 20 *search and development, not including amounts appor-*
 21 *tioned to States, shall be expended on basic research and*
 22 *on long-term applied research projects which are expected*
 23 *to have a duration of 10 years or more. Such expenditures*
 24 *may include expenditures made under section 328.”.*

1 (b) *CONFORMING AMENDMENT.*—*The table of sections*
 2 *of chapter 3 of title 23, United States Code, is amended*
 3 *by adding at the end the following new item:*

“329. Minimum expenditures on long-term research projects.”.

4 **SEC. 6009. AUTHORIZATION OF APPROPRIATIONS.**

5 (a) *SURFACE TRANSPORTATION RESEARCH AND*
 6 *TECHNOLOGY DEVELOPMENT PROGRAM.*—*There are au-*
 7 *thorized to be appropriated, out of the Highway Trust Fund*
 8 *(other than the Mass Transit Account)—*

9 (1) \$118,000,000 for fiscal year 1998;

10 (2) \$118,000,000 for fiscal year 1999; and

11 (3) \$118,000,000 for fiscal year 2000,

12 *to carry out section 307 of title 23, United States Code.*

13 (b) *APPLIED RESEARCH AND TECHNOLOGY PRO-*
 14 *GRAM.*—*There are authorized to be appropriated, out of the*
 15 *Highway Trust Fund (other than the Mass Transit Ac-*
 16 *count)—*

17 (1) \$45,000,000 for fiscal year 1998;

18 (2) \$45,000,000 for fiscal year 1999; and

19 (3) \$45,000,000 for fiscal year 2000,

20 *to carry out section 326 of title 23, United States Code.*

21 *Where appropriate to achieve the goals established under*
 22 *subsection (a) of that section, the Secretary may allocate*
 23 *such funds to States.*

1 (c) *LOCAL TECHNICAL ASSISTANCE PROGRAM.*—*There*
 2 *are authorized to be appropriated, out of the Highway*
 3 *Trust Fund (other than the Mass Transit Account)—*

4 (1) \$10,000,000 for fiscal year 1998;

5 (2) \$10,000,000 for fiscal year 1999; and

6 (3) \$10,000,000 for fiscal year 2000,

7 *to carry out section 327(a) of title 23, United States Code.*

8 (d) *NATIONAL HIGHWAY INSTITUTE.*—*There are au-*
 9 *thorized to be appropriated, out of the Highway Trust Fund*
 10 *(other than the Mass Transit Account)—*

11 (1) \$8,000,000 for fiscal year 1998;

12 (2) \$8,000,000 for fiscal year 1999; and

13 (3) \$8,000,000 for fiscal year 2000,

14 *to carry out section 321 of title 23, United States Code.*

15 (e) *TRANSPORTATION FELLOWSHIP PROGRAM.*—*There*
 16 *are authorized to be appropriated, out of the Highway*
 17 *Trust Fund (other than the Mass Transit Account)—*

18 (1) \$2,000,000 for fiscal year 1998;

19 (2) \$2,000,000 for fiscal year 1999; and

20 (3) \$2,000,000 for fiscal year 2000,

21 *to carry out section 327(b) of title 23, United States Code.*

22 (f) *TECHNOLOGY PARTNERSHIPS.*—*There are author-*
 23 *ized to be appropriated, out of the Highway Trust Fund*
 24 *(other than the Mass Transit Account)—*

25 (1) \$10,000,000 for fiscal year 1998;

1 (2) \$10,000,000 for fiscal year 1999; and
 2 (3) \$10,000,000 for fiscal year 2000,
 3 to carry out section 327(c) of title 23, United States Code.

4 (g) *LONG-TERM PAVEMENT PERFORMANCE*.—There
 5 are authorized to be appropriated, out of the Highway
 6 Trust Fund (other than the Mass Transit Account)—

7 (1) \$15,000,000 for fiscal year 1998;
 8 (2) \$15,000,000 for fiscal year 1999; and
 9 (3) \$15,000,000 for fiscal year 2000,
 10 to carry out section 328(a) of title 23, United States Code.

11 (h) *ADVANCED RESEARCH*.—There are authorized to
 12 be appropriated, out of the Highway Trust Fund (other
 13 than the Mass Transit Account)—

14 (1) \$12,000,000 for fiscal year 1998;
 15 (2) \$12,000,000 for fiscal year 1999; and
 16 (3) \$12,000,000 for fiscal year 2000,
 17 to carry out section 328(b) of title 23, United States Code.

18 ***Subtitle B—Intelligent***
 19 ***Transportation Systems***

20 **SEC. 6021. SHORT TITLE AMENDMENT.**

21 Section 6051 of the Intermodal Surface Transpor-
 22 tation Efficiency Act of 1991 is amended by striking “Vehi-
 23 cle-Highway Systems Act of 1991” and inserting in lieu
 24 thereof “Transportation Systems Act of 1997”.

1 **SEC. 6052. ESTABLISHMENT AND SCOPE OF PROGRAM.**

2 Section 6052 of the Intermodal Surface Transpor-
3 tation Efficiency Act of 1991 is amended to read as follows:

4 **“SEC. 6052. ESTABLISHMENT AND SCOPE OF PROGRAM.**

5 “(a) *ESTABLISHMENT.*—Subject to the provisions of
6 this part, and consistent with the plan developed under sec-
7 tion 6123 of title 49, United States Code, the Secretary shall
8 conduct a program to research, develop, and operationally
9 test intelligent transportation systems and promote imple-
10 mentation of integrated and interoperable intelligent trans-
11 portation systems as a component of the Nation’s surface
12 transportation systems.

13 “(b) *GOALS.*—The goals of the program to be carried
14 out under this part shall include, but not be limited to—

15 “(1) the protection and enhancement of the envi-
16 ronment affected by surface transportation;

17 “(2) the enhancement of safe and efficient oper-
18 ation of the Nation’s highway systems with a particu-
19 lar emphasis on aspects of systems that will increase
20 safety and identification of aspects of the system that
21 may degrade safety;

22 “(3) the reduction of traffic congestion;

23 “(4) the development, in advance of Federally
24 supported deployment efforts, of the standards and
25 protocols required to ensure the interoperability of in-
26 telligent transportation systems;

1 “(5) the collection and analysis of data to enable
 2 purchasers of such systems to understand how best to
 3 apply intelligent transportation systems to their local
 4 situations, to understand life cycle costs, and to deter-
 5 mine the benefits of their systems in rural and urban
 6 settings;

7 “(6) the development of a workforce capable of
 8 operating intelligent transportation systems;

9 “(7) the development of new generations of intel-
 10 ligent transportation systems which are cost-efficient
 11 and easier to operate; and

12 “(8) the completion of the Federal financial role
 13 in the Commercial Vehicle Information Systems and
 14 Networks and transfer of responsibility for its oper-
 15 ations and maintenance to a non-Federal entity by
 16 October 1, 2002.”.

17 **SEC. 6023. GENERAL AUTHORITIES AND REQUIREMENTS.**

18 Section 6053 of the Intermodal Surface Transpor-
 19 tation Efficiency Act of 1991 is amended—

20 (1) in subsection (a), by striking “colleges and
 21 universities, and State” and inserting in lieu thereof
 22 “institutions of higher education and State, re-
 23 gional,”;

24 (2) by amending subsection (b) to read as fol-
 25 lows:

1 “(b) *STANDARDS.*—Consistent with section 12(d) of the
2 *National Technology Transfer and Advancement Act of*
3 1995, the Secretary shall expedite the development, imple-
4 mentation, and maintenance of a National Architecture
5 and of the required voluntary consensus standards and pro-
6 tocols to promote and support the widespread use and eval-
7 uation of interoperable intelligent transportation systems
8 technology as a component of the Nation’s surface transpor-
9 tation systems. Not later than 6 months after the date of
10 the enactment of the Surface Transportation Research and
11 Development Act of 1997, the Secretary shall develop a
12 prioritized list of intelligent transportation systems stand-
13 ards. The Secretary shall annually update such list. To the
14 extent practicable, such standards and protocols shall pro-
15 mote interoperability among intelligent transportation sys-
16 tems technologies implemented or likely to be implemented
17 in the future throughout the States. The Secretary may
18 enter into agreements with private sector standards develop-
19 ment organizations, with national laboratories, and with
20 the National Institute of Standards and Technology in car-
21 rying out this subsection.”;

22 (3) in subsection (c)—

23 (A) by inserting “independent” after “re-
24 quirements for the”; and

(B) by inserting “, including provisions to ensure the objectivity and independence of the evaluator needed to avoid any real or apparent conflict of interest or potential influence on the outcome by parties to such tests or to any other formal evaluation conducted under this part” after “section 6055”; and

(4) in subsection (e), by striking “vehicle-highway” and inserting in lieu thereof “transportation”.

SEC. 6024. STRATEGIC PLAN, IMPLEMENTATION, AND REPORT TO CONGRESS.

Section 6054 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended—

(1) by amending subsection (a)(2)(E) to read as follows:

“(E) promote interoperability and integration of intelligent transportation systems and require that systems using Federal funds conform to the National Architecture and to interoperability standards.”;

(2) by amending subsection (c)(2)(A) to read as follows:

“(A) describe in detail the extent to which the goals, objectives, and milestones specified under subsection (a)(2)(A) were met in the pre-

1 *vious fiscal year, including standards develop-*
 2 *ment;”;* and

3 *(3) by striking subsection (d).*

4 **SEC. 6025. TECHNICAL, PLANNING, AND OPERATIONAL**
 5 **TESTING PROJECT ASSISTANCE.**

6 *Section 6055 of the Intermodal Surface Transpor-*
 7 *tation Efficiency Act of 1991 is amended—*

8 *(1) by striking “vehicle-highway” each place it*
 9 *appears;*

10 *(2) in subsection (c), by striking “for a des-*
 11 *ignated corridor” and inserting in lieu thereof “under*
 12 *a project selected under section 6056”; and*

13 *(3) in subsection (d)—*

14 *(A) by striking “universities” and inserting*
 15 *in lieu thereof “institutions of higher education”;*

16 *(B) by striking “and” at the end of para-*
 17 *graph (1)(A);*

18 *(C) by inserting after paragraph (1)(B) the*
 19 *following new subparagraphs:*

20 *“(C) validate and accelerate the establish-*
 21 *ment and widespread conformance with the Na-*
 22 *tional Architecture and related standards and*
 23 *protocols, including demonstrations and tests re-*
 24 *lated to integrating and increasing the interoper-*

1 *ability of currently installed intelligent transpor-*
2 *tation systems;*

3 *“(D) demonstrate innovative contracting or*
4 *financing strategies, or address legal, techno-*
5 *logical, or institutional barriers to the wide-*
6 *spread utilization of intelligent transportation*
7 *systems technology;*

8 *“(E) validate the effectiveness of integrated*
9 *intelligent transportation systems and infra-*
10 *structure, including multimodal applications, in*
11 *enhancing the safety and efficiency of surface*
12 *transportation;*

13 *“(F) demonstrate advanced traffic manage-*
14 *ment technologies, including the use of fiber optic*
15 *cables and video, to monitor and control traffic*
16 *flow and volume; and*

17 *“(G) contribute to the development of a*
18 *workforce capable of operating and maintaining*
19 *intelligent transportation systems and infra-*
20 *structure;”;* and

21 *(D) by amending paragraph (3) to read as*
22 *follows:*

23 *“(3) require that operational tests utilizing Fed-*
24 *eral funds under this part—*

1 “(A) are designed for the collection of data
 2 to permit objective evaluation of the success of
 3 the tests and the derivation of cost-benefit infor-
 4 mation that is useful to others contemplating the
 5 purchase of similar systems; and

6 “(B) have a written evaluation of the intel-
 7 ligent transportation systems technologies inves-
 8 tigated and of the results of the investigation
 9 which—

10 “(i) is consistent with the guidelines
 11 developed pursuant to section 6053(c); and

12 “(ii) includes detailed information on
 13 the benefits and costs of the intelligent
 14 transportation systems being tested to aid
 15 similarly situated localities who are con-
 16 templating intelligent transportation sys-
 17 tems purchases.”.

18 **SEC. 6026. APPLICATIONS OF TECHNOLOGY.**

19 Section 6056 of the Intermodal Surface Transpor-
 20 tation Efficiency Act of 1991 is amended to read as follows:

21 **“SEC. 6056. APPLICATIONS OF TECHNOLOGY.**

22 “(a) **TECHNOLOGY UTILIZATION.**—The Secretary shall
 23 conduct a program to promote the utilization of regional
 24 integrated, intermodal intelligent transportation systems,
 25 including—

1 “(1) validating and accelerating the establish-
2 ment of national intelligent transportation systems
3 standards and protocols; and

4 “(2) technical assistance and training in ad-
5 vanced technologies by institutions of higher edu-
6 cation and others.

7 “(b) *PROJECT SELECTION*.—Project selection under
8 this section shall—

9 “(1) help fulfill the goals and objectives outlined
10 in the plan developed under section 6054(a)(1);

11 “(2) when applicable, be part of approved plans
12 and programs developed under Statewide and metro-
13 politan transportation planning processes;

14 “(3) involve significant non-Federal investment;
15 and

16 “(4) include an analysis of life cycle costs and
17 a financial plan for operations and maintenance.

18 “(c) *STANDARDIZATION OF INTELLIGENT TRANSPOR-*
19 *TATION SYSTEMS*.—(1) Funds authorized for carrying out
20 this section may be obligated to deploy intelligent transpor-
21 tation systems technologies only in accordance with provi-
22 sional or final voluntary consensus standards and protocols
23 necessary to ensure interoperability. In the absence of re-
24 quired standards and protocols, available funds obligated
25 under this section shall be used exclusively for the research

1 *and technology development and operational tests of intel-*
2 *ligent transportation systems.*

3 “(2) *For purposes of this subsection, the term ‘provi-*
4 *sional’ means approved by the appropriate subunit of a pri-*
5 *vate sector standards development organization and, in the*
6 *judgment of the Secretary, not likely to change significantly*
7 *in its final form.*

8 “(d) *FUNDING RESTRICTIONS.—Eligibility for fund-*
9 *ing under this section for projects in metropolitan areas*
10 *shall be limited to items necessary to integrate intelligent*
11 *transportation systems elements. At least 15 percent of*
12 *funds available for intelligent transportation systems shall*
13 *be available only for basic research and longer-term applied*
14 *research, including—*

15 “(1) *research on new, unproven intelligent trans-*
16 *portation systems which are at least 5 years from uti-*
17 *lization, and are designed to reduce congestion, en-*
18 *hance safety, and improve cost effectiveness;*

19 “(2) *human factors research, including research*
20 *in the science of the driving process, to improve the*
21 *operational efficiency and safety of intelligent trans-*
22 *portation systems;*

23 “(3) *research on environmental, weather, and*
24 *natural conditions that impact intelligent transpor-*
25 *tation systems, including the effects of cold climates;*

1 “(4) research to increase intelligent transpor-
 2 tation systems and infrastructure durability; and
 3 “(5) materials or magnetics research.”.

4 **SEC. 6027. FUNDING.**

5 Section 6058 of the Intermodal Surface Transpor-
 6 tation Efficiency Act of 1991 is amended—

7 (1) by striking “IVHS CORRIDORS PROGRAM”
 8 in the heading of subsection (a) and inserting in lieu
 9 thereof “APPLICATIONS OF TECHNOLOGY”;

10 (2) in subsection (a), by striking “section 6056”
 11 and inserting in lieu thereof “this part”;

12 (3) in subsection (a), by striking “\$71,000,000”
 13 and all that follows through “authorized under this
 14 part” and inserting in lieu thereof “\$235,000,000 for
 15 each of the fiscal years 1998 through 2000”;

16 (4) by striking subsections (b) and (c);

17 (5) by redesignating subsections (d) and (e) as
 18 subsections (b) and (c), respectively; and

19 (6) in subsection (b), as so redesignated by para-
 20 graph (5) of this section, by striking “80 percent”
 21 and all that follows through “funding of such activi-
 22 ties” and inserting in lieu thereof “50 percent of the
 23 cost of such activities”.

1 **SEC. 6028. DEFINITIONS.**

2 Section 6059 of the Intermodal Surface Transpor-
3 tation Efficiency Act of 1991 is amended to read as follows:

4 **“SEC. 6059. DEFINITIONS.**

5 *“For the purposes of this part—*

6 *“(1) the term ‘institution of higher education’*
7 *has the meaning given that term in section 1201 of*
8 *the Higher Education Act of 1965;*

9 *“(2) the term ‘intelligent transportation systems’*
10 *means the development or application of electronics,*
11 *communications, or information processing (includ-*
12 *ing advanced traffic management systems, commer-*
13 *cial vehicle operations, advanced traveler information*
14 *systems, commercial and advanced vehicle control sys-*
15 *tems, advanced public transportation systems, sat-*
16 *ellite vehicle tracking systems, and advanced vehicle*
17 *communications systems) used singly or in combina-*
18 *tion to improve the efficiency and safety of surface*
19 *transportation systems;*

20 *“(3) the term ‘National Architecture’ means the*
21 *common framework adopted by the Secretary, includ-*
22 *ing technical guidelines, details, and standards, to en-*
23 *sure the coordinated development of interoperable in-*
24 *telligent transportation systems; and*

25 *“(4) the term ‘State’ has the meaning given that*
26 *term in section 101 of title 23, United States Code.”.*