

SURFACE TRANSPORTATION RESEARCH AND
DEVELOPMENT ACT OF 1997

APRIL 29, 1998.—Ordered to be printed

Mr. SENSENBRENNER, from the Committee on Science,
submitted the following

R E P O R T

together with

ADDITIONAL VIEWS

[To accompany H.R. 860]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, to whom was referred the bill (H.R. 860) to authorize appropriations to the Department of Transportation for surface transportation research and development, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

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I. AMENDMENT

The amendment is as follows:
Strike out all after the enacting clause and insert in lieu thereof the following:

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

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

(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.

SEC. 2. PURPOSES.

The purposes of this Act are—

- (1) to promote an inclusive approach to surface transportation research and development by requiring a multimodal focus, facilitating cooperation among industry, institutions of higher education, and government, and increasing coordination between Federal and State research organizations;
- (2) to promote high standards in research, development, and technology utilization through merit review, competitive awards, enhanced technology transfer, accelerated standards development, and better understanding of and increased use of life cycle costing of projects;
- (3) to strengthen basic and longer term transportation research efforts and strengthen the role of institutions of higher education in those programs;
- (4) to strengthen the efforts of the Department of Transportation at strategic and long-range planning, and to streamline data collection, measurement of research results, and utilization of research results by others; and
- (5) to enhance the impact of transportation research and development by ensuring the consideration of safety, the efficient movement of people and goods, the environment, and life cycle cost savings of transportation decisions.

SEC. 3. LIMITATIONS.

(a) PROHIBITION OF LOBBYING ACTIVITIES.—No funds appropriated to the Secretary of Transportation shall be available for any activity whose purpose is to influence any pending Federal, State, or local legislation, except that this subsection shall not prevent officers or employees of the United States or of its departments or agencies from communicating to Members of Congress on the request of any Member or to Congress, through the proper channels, requests for legislation or appropriations which they deem necessary for the efficient conduct of the public business. Nothing in this subsection shall prohibit officers or employees of the United States or its departments or agencies from testifying before any Federal, State, or local legislative body upon the invitation of such legislative body.

(b) **LIMITATION ON APPROPRIATIONS.**—No sums are authorized to be appropriated to the Secretary of Transportation for fiscal years 1998, 1999, and 2000 for the purposes for which sums are authorized by this Act and the amendments made by this Act, unless such sums are specifically authorized to be appropriated by this Act or the amendments made by this Act.

(c) **ELIGIBILITY FOR AWARDS.**—

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

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

(3) **DEFINITION.**—For purposes of this subsection, the term “grant agreement” means a legal instrument whose principal purpose is to transfer a thing of value to the recipient to carry out a public purpose of support or stimulation authorized by a law of the United States, and does not include the acquisition (by purchase, lease, or barter) of property or services for the direct benefit or use of the United States Government. Such term does not include a cooperative agreement (as such term is used in section 6305 of title 31, United States Code) or a cooperative research and development agreement (as such term is defined in section 12(d)(1) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a(d)(1))).

SEC. 4. NOTICE.

(a) **NOTICE OF REPROGRAMMING.**—If any funds authorized by this Act or the amendments made by this Act are subject to a reprogramming action that requires notice to be provided to the Appropriations Committees of the House of Representatives and the Senate, notice of such action shall concurrently be provided to the Committees on Science and Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(b) **NOTICE OF REORGANIZATION.**—The Secretary of Transportation shall provide notice to the Committees on Science, Transportation and Infrastructure, and Appropriations of the House of Representatives, and the Committees on Commerce, Science, and Transportation and Appropriations of the Senate, not later than 15 days before any major reorganization of any program, project, or activity of the Department of Transportation for which funds are authorized by this Act or the amendments made by this Act.

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

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

(1) give high priority to correcting all 2-digit date-related problems in its computer systems to ensure that those systems continue to operate effectively in the year 2000 and beyond;

(2) assess immediately the extent of the risk to the operations of the Department of Transportation posed by the problems referred to in paragraph (1), and plan and budget for achieving Year 2000 compliance for all of its mission-critical systems; and

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

TITLE VI—RESEARCH

Subtitle A—Programs and Activities

SEC. 6001. TRANSPORTATION RESEARCH AND TECHNOLOGY DEVELOPMENT.

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

“CHAPTER 61—RESEARCH AND 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.

“SUBCHAPTER I—GENERAL AND ADMINISTRATIVE

“§ 6101. Authority for research and technology development program

“The Secretary of Transportation is authorized to carry out a program of research and technology development activities in support of the Department’s mission. Such activities shall be carried out in accordance with the plan developed under section 6123, and shall include—

- “(1) strategic planning and policy analysis, including State planning and research;
- “(2) research and technology development;
- “(3) collection, analysis, and dissemination of research data and results;
- “(4) systems engineering and systems assessments;
- “(5) technology demonstrations and operational tests; and
- “(6) technology transfer and skills development.

“§ 6102. Transactional authority

“To carry out the activities described in section 6101, the Secretary of Transportation may enter into contracts, grants, and cooperative agreements with any public or private sector entity.

“§ 6103. Definitions

“For purposes of this chapter—

- “(1) the term ‘institution of higher education’ has the meaning given that term in section 1201 of the Higher Education Act of 1965; and
- “(2) the term ‘operating administrations’ means the Administrations that are components of the Department of Transportation, and the Bureau of Transportation Statistics.

“SUBCHAPTER II—PLANNING

“§ 6121. Planning

“The Secretary of Transportation shall—

- “(1) establish a strategic planning process, consistent with section 306 of title 5, United States Code, for the Department of Transportation to determine national transportation research and technology development priorities;
- “(2) coordinate Federal transportation research and technology development activities; and
- “(3) measure the results of those activities and how they impact the performance of the national transportation system.

“§ 6122. Implementation

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

- “(1) provide for the integrated planning, coordination, and consultation among the operating administrations, all other Federal agencies with responsibility for transportation research and technology development, State and local governments, institutions of higher education, industry, and other private and public

sector organizations engaged in transportation-related research and development activities;

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

“(3) develop and implement methods for evaluating the comparative utility, life cycle costs, and environmental and social impacts of various transportation alternatives; and

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

“§ 6123. Surface transportation research and technology development plan

“(a) DEVELOPMENT.—In implementing section 6121, the Secretary of Transportation shall develop an integrated surface transportation research and technology development plan (in this section referred to as the ‘plan’).

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

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

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

“(B) development of a seamless transportation system by integrating transportation modes; and

“(C) enhancement of the role of universities in surface transportation research and technology development and technology transfer;

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

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

“(A) collecting, assessing, and disseminating research and technology development results from other countries that are relevant to surface transportation; and

“(B) analyzing and applying research and technology development from other fields and industries that may have applications for the surface transportation sector;

“(4) a description of the Department’s overall strategy, and the role of each of the operating administrations in carrying out the plan over the next 5 years including a description of procedures for coordination of its efforts with the other operating administrations and with other Federal agencies;

“(5) an assessment of how State and local research and technology development activities are contributing to the achievement of the goals identified under paragraph (1);

“(6) details of the Department’s surface transportation research and technology development programs, including performance goals, resources needed to achieve those goals, and performance indicators as described in section 1115(a) of title 31, United States Code, for the next 5 years for each area of research and technology development;

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

“(8) responses to significant comments obtained from the National Research Council and other advisory bodies, and a description of any corrective actions taken pursuant thereto.

“(c) COOPERATION WITH INDUSTRY.—A primary component of the plan shall be cooperation with industry in carrying out this chapter and strengthening the manufacturing capabilities of United States firms in order to produce products for transportation systems.

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

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

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

“(3) program performance report required under section 1116 of title 31, United States Code,

with respect to surface transportation research and technology development.

“(e) STRATEGIC PLAN.—

“(1) INITIAL TRANSMITTAL.—Within 1 year after the date of the enactment of the Surface Transportation Research and Development Act of 1997, the Secretary shall transmit to the Director of the Office of Management and Budget

and to the Congress a strategic plan as described in section 306(a) of title 5, United States Code, which shall include the plan developed under this section.

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

“(f) PERFORMANCE PLANS AND REPORTS.—In complying with sections 1115 and 1116 of title 31, United States Code, the Secretary shall include—

“(1) a summary of the results for the previous fiscal year of surface transportation research and technology development programs to which the Department of Transportation contributes, along with—

“(A) an analysis of the relationship between those results and the goals identified under subsection (b)(1); and

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

“(2) a description of significant surface transportation research and technology development initiatives, if any, undertaken during the previous fiscal year which were not in the plan developed under subsection (a), and any significant changes in the plan from the previous year’s plan; and

“(3) a list of all surface transportation research and technology development grants, contracts, and cooperative agreements entered into by the Department of Transportation that were not competitively awarded on the basis of merit review.

“§ 6124. Merit review and performance measurement

“The Secretary of Transportation shall, within one year after the date of the enactment of the Surface Transportation Research and Development Act of 1997, transmit to the Congress a report describing competitive merit review procedures for research and technology development, and performance measurement procedures for research and technology development and demonstrations, developed in consultation with the National Science Foundation and the National Institute of Standards and Technology.

“§ 6125. Governmental procedures

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

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

“(2) develop model transactions for carrying out and coordinating Federal and State surface transportation research and technology development activities.

“§ 6126. Role of Deputy Secretary

“The implementation of this subchapter shall be coordinated through the Deputy Secretary of Transportation.

“§ 6127. Funding

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

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

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

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

to carry out this subchapter.

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

“SUBCHAPTER III—UNIVERSITY RESEARCH

“§ 6131. University research in general

“(a) COORDINATION.—The Secretary of Transportation, acting through the Deputy Secretary of Transportation, shall coordinate the efforts of the Department to enhance the role of institutions of higher education in transportation research and technology development and technology transfer.

“(b) ASSISTANCE.—The Secretary may make grants to and enter into contracts and cooperative agreements with institutions of higher education to provide assistance as the Secretary considers necessary to carry out the Department’s research and technology development and technology transfer responsibilities and programs.

“(c) PROGRAM COORDINATION.—The Secretary shall—

- “(1) provide for coordination of research and technology development and technology transfer activities that institutions of higher education carry out with funds provided directly or indirectly by the Department of Transportation;
- “(2) provide for the dissemination of the results of activities described in paragraph (1), including, to the maximum extent practicable, dissemination through the National Technical Information Service; and
- “(3) at least annually, consistent with the plan developed under section 6123, review and evaluate the priorities of such activities and their effectiveness in carrying out this section.

“§ 6132. National university transportation centers

“(a) REGIONALLY BASED CENTERS.—The Secretary of Transportation shall make grants to institutions of higher education to establish and operate 1 university transportation center in each of the 10 regions that comprise the Standard Federal Regional Boundary System.

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

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

- “(1) the research and technology development resources available to the recipient to carry out this section;
- “(2) the capability of the recipient to provide leadership in making national and regional contributions to the solution of immediate and long-range transportation problems;
- “(3) the recipient’s demonstrated ability to disseminate results of transportation research through a statewide or regionwide technology transfer program; and
- “(4) the strategic plan the recipient proposes to carry out under the grant.

“(d) OBJECTIVES.—Each university transportation center established and operated under this section shall conduct—

- “(1) competitively awarded, peer reviewed transportation research;
- “(2) an education program that includes multidisciplinary course work and participation in research; and
- “(3) an ongoing program of transportation technology transfer.

“(e) MAINTENANCE OF EFFORT.—As a condition of receiving a grant under subsection (a) or (b), the Secretary shall require the recipient to agree to maintain total expenditures from all sources, other than under this section, for the university transportation center and related research activities at a level at least equal to the average level of expenditures for such activities in the 2 fiscal years prior to award of the grant.

“(f) MATCHING REQUIREMENT.—A grant under subsection (a) or (b) shall not exceed 50 percent of the cost of establishing and operating the university transportation center and related research activities the recipient carries out for the fiscal year or years for which the grant is made.

“§ 6133. Research grants program involving undergraduate students

“(a) ESTABLISHMENT.—The Secretary of Transportation may establish a program for awarding grants to researchers at primarily undergraduate institutions who involve undergraduate students in research on subjects of relevance to transportation. Grants may be awarded under this section for—

- “(1) research projects to be carried out at primarily undergraduate institutions; or
- “(2) research projects that combine research at primarily undergraduate institutions with other research supported by the Department of Transportation.

“(b) NOTICE OF CRITERIA.—Within 6 months after the date of the enactment of the Surface Transportation Research and Development Act of 1997, the Secretary shall establish and publish in the Federal Register criteria for the submittal of proposals for a grant under this section, and for the awarding of such grants.

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

- “(1) the relevance of the proposed research to the plan developed under section 6123;
- “(2) the scientific and technical merit of the proposed research; and

“(3) the potential for participation by undergraduate students in the proposed research.

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

“§ 6134. Authorization of appropriations

“(a) AUTHORIZATION.—There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account), to the Secretary of Transportation—

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

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

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

for carrying out sections 6132 and 6133.

“(b) AVAILABILITY OF FUNDS.—Funds authorized for carrying out sections 6132 and 6133 shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of title 23, United States Code, and such funds shall remain available for obligation for a period of two years after the last day of the fiscal year for which such funds are made available under subsection (a).

“SUBCHAPTER IV—COMMUNITY AND ENVIRONMENTAL IMPACT RESEARCH

“§ 6141. Community and Environmental Impact Research Program

“(a) ESTABLISHMENT.—The Secretary of Transportation shall establish a Community and Environmental Impact Research Program to assess the relationships between transportation modes, programs, and projects and their environmental and community impacts. As appropriate, in carrying out the program, the Secretary shall consult with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Housing and Urban Development, the Secretary of Health and Human Services, and the heads of other appropriate Federal departments and agencies and shall maximize the involvement of State and local governments and metropolitan planning organizations, United States colleges and universities, nonprofit organizations and research institutes, and the private sector.

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

“(1) develop transportation alternatives which improve mobility and access, and reduce negative impacts on communities and the environment of transportation systems;

“(2) reduce emissions;

“(3) develop more accurate models for evaluating alternative transportation control measures and alternative transportation system designs, including pedestrian and bicycle-related measures and system designs which may reduce emissions, and are appropriate for use by metropolitan planning organizations and State and local governments in designing implementation plans to meet air quality standards under the Clean Air Act;

“(4) improve understanding of the factors that contribute to the demand for transportation, including transportation system design, demographic change, and land use planning;

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

“(6) develop more comprehensive information regarding the role of trails designed for pedestrians, bicycles, and other nonmotorized transportation in facilitating accessibility, and mobility within communities; and

“(7) examine the effects on transportation demand of the use of communications and other information technologies.

“(c) GRANTS, COOPERATIVE AGREEMENTS, AND CONTRACTS.—The Secretary may make grants and enter into cooperative agreements and contracts to carry out this section. Awards shall be made on the basis of a competitive, merit-based process.

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

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

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

“§ 6142. Transportation-Environment Cooperative Research Program

“(a) INDEPENDENT GOVERNING BOARD.—

“(1) ESTABLISHMENT.—The Secretary of Transportation, after consultation with the Secretary of Energy, the Administrator of the Environmental Protection Agency, the Secretary of the Interior, the Secretary of Housing and Urban Development, and the Secretary of Health and Human Services, shall establish and maintain an independent governing board to recommend environmental and energy conservation, technology, and technology transfer research projects related to transportation.

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

“(A) at least 15 persons who are not Federal employees who collectively comprise an appropriate balance of representatives of State transportation and environmental agencies, environmental scientists and engineers, representatives of environmental organizations, and representatives of metropolitan planning organizations and transit operating agencies; and

“(B) 1 representative each from—

“(i) the Department of Transportation;

“(ii) the Department of Energy;

“(iii) the Environmental Protection Agency;

“(iv) the Department of the Interior; and

“(v) the Department of Health and Human Services.

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

“(3) TRAVEL EXPENSES.—Each member of the board shall receive travel expenses, including per diem in lieu of subsistence, in accordance with sections 5702 and 5703 of title 5, United States Code.

“(4) NONAPPLICABILITY.—Section 14 of the Federal Advisory Committee Act shall not apply to the board.

“(b) NATIONAL ACADEMY OF SCIENCES.—The Secretary of Transportation shall enter into an agreement with the National Academy of Sciences under which the National Academy of Sciences will award grants, through a competitive, merit-based, peer-reviewed process, for carrying out research recommended by the independent governing board established under subsection (a).

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

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

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

“61. RESEARCH AND TECHNOLOGY DEVELOPMENT 6101”.

SEC. 6002. SURFACE TRANSPORTATION RESEARCH AND TECHNOLOGY DEVELOPMENT PROGRAM.

Section 307 of title 23, United States Code, is amended—

(1) in subsection (a)—

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

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

“(C) TECHNOLOGICAL INNOVATION.—The programs and activities carried out under this section shall be consistent with the plan developed under section 6123 of title 49.

“(D) FUNDS.—Of the amounts authorized to be appropriated under section 6009(a) of the Surface Transportation Research and Development Act of 1997, not more than—

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

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

“(iii) \$116,000,000 for fiscal year 2000,

and such funds as may be deposited by any cooperating organization or person in a special account of the Treasury of the United States established for such purposes, shall be available for carrying out this subsection and subsection (b). Such funds shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, and such funds shall remain available for obligation for a period of three years after the last day of the fiscal year for which the funds are made available.

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

(D) by striking paragraph (3); and

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

(2) by amending subsection (b) to read as follows:

“(b) MANDATORY CONTENTS OF PROGRAM.—The surface transportation research and technology development programs of the Department of Transportation shall be consistent with the plan developed under section 6123 of title 49, and shall include—

“(1) a coordinated long-term program of research for the development, use, and dissemination of performance indicators to measure the performance of the surface transportation system of the United States, including indicators for productivity, efficiency, energy use, air quality, congestion, safety, maintenance, and other factors which reflect the overall performance of such system; and

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

“(A) methods, materials, and testing to improve the durability of surface transportation infrastructure facilities and extend the life of bridge structures, including new and innovative technologies to reduce corrosion and tests simulating seismic activity, vibration, and weather;

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

“(C) research on the use of recycled materials such as paper and plastic fiber reinforcement systems;

“(D) research and development on the implementation of new and innovative fuel technologies, including biodiesel fuel, that enable recycled and renewable resources to be used as transportation fuels;

“(E) a surface transportation research program to develop evaluation equipment for infrastructure facilities, including facilities that utilize advanced materials;

“(F) information technology including—

“(i) appropriate computer programs to collect and analyze data on the status of the existing infrastructure facilities for enhancing management, growth, and capacity; and

“(ii) models of surface transportation systems for—

“(I) predicting capacity, safety, and infrastructure durability problems;

“(II) evaluating planned research projects; and

“(III) testing the strengths and weaknesses of proposed revisions in surface transportation operations programs;

“(G) new innovative technologies to enhance and facilitate field construction and rehabilitation techniques for minimizing disruption during repair and maintenance of structures; and

“(H) an increased understanding of the extent to which traditional contracting and specification practices impede innovation, and of the role of alternative practices and incentives to overcoming barriers to the utilization of advanced technologies and research results.”;

(3) by amending subsection (d) to read as follows:

“(d) STUDY OF FUTURE STRATEGIC HIGHWAY RESEARCH PROGRAM.—

“(1) STUDY.—

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

“(B) CONSULTATION.—In conducting the study, the Board shall consult with the American Association of State Highway and Transportation Officials and such other entities as the Board determines to be necessary to the conduct of the study.

“(2) REPORT.—Not later than 2 years after making a grant or entering into a cooperative agreement or contract under subsection (a), the Board shall submit a final report on the results of the study to the Secretary, the Committee on Environment and Public Works of the Senate, and the Committee on Science and the Committee on Transportation and Infrastructure of the House of Representatives.”;

(4) by striking subsection (e);

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

(6) in subsection (e), as so redesignated by paragraph (5) of this section—

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

“(1) ESTABLISHMENT.—The Secretary shall establish a program to study the vulnerability of the Federal-aid highway system and other surface transportation systems to seismic activity and to develop and implement cost-effective methods to reduce such vulnerability.”;

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

(C) by redesignating paragraph (3) as paragraph (2); and

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

“(3) AUTHORIZATION OF APPROPRIATIONS.—(A) Of the amounts authorized to be appropriated under section 6009(a) of the Surface Transportation Research and Development Act of 1997, not more than—

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

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

“(iii) \$2,000,000 for fiscal year 2000,

shall be available for carrying out this subsection.

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

(7) in subsection (f), as so redesignated by paragraph (5) of this section, by inserting “DEFINITION.—” before “As used in”; and

(8) in subsection (g), as so redesignated by paragraph (5) of this section—

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

(B) by inserting “and the Committee on Science” after “Transportation and Infrastructure”; and

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

SEC. 6003. STATISTICS RESEARCH.

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

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

“(1) the investigation of subjects listed in subsection (c)(1), and for research and development of new methods of data collection, management, integration, dissemination, interpretation, and analysis;

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

“(3) development and improvement of methods for sharing geographic data. There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account), to the Secretary \$500,000 for each of the fiscal years 1998, 1999, and 2000 for carrying out this subsection. Such funds shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of title 23, United States Code, and such funds shall remain available for obligation for a period of two years after the last day of the fiscal year for which the funds are made available.”.

SEC. 6004. APPLIED RESEARCH AND TECHNOLOGY UTILIZATION PROGRAM.

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

“§ 326. Applied research and technology utilization program

“(a) IDENTIFICATION OF GOALS AND IMPLEMENTATION.—The Secretary shall, beginning 30 days after the transmittal of the plan developed under section 6123 of title

49, identify the 3 highest priority applied research and technology utilization goals of the Department, consistent with that plan, and shall implement a program to achieve those goals. The Secretary shall give preference to projects that leverage Federal funds against significant resources from other sources, public or private.

“(b) FUNDING.—Funds authorized for carrying out this section shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, except that the Federal share of the cost of any activity under this section shall not exceed 50 percent, and such funds shall remain available for obligation for a period of 3 years after the last day of the fiscal year for which the funds are appropriated.”

(b) CONFORMING AMENDMENT.—The item relating to section 326 in the table of sections of chapter 3 of title 23, United States Code, is amended to read as follows: “326. Applied research and technology utilization program.”

SEC. 6005. TECHNOLOGY TRANSFER AND TECHNOLOGY PARTNERSHIPS.

(a) TECHNOLOGY TRANSFER AND TECHNOLOGY PARTNERSHIPS.—Chapter 3 of title 23, United States Code, is further amended by adding at the end the following new section:

“§ 327. Technology transfer and technology partnerships

“(a) LOCAL TECHNICAL ASSISTANCE PROGRAM.—

“(1) AUTHORITY.—The Secretary shall carry out a transportation technology transfer program, which is consistent with the plan developed under section 6123 of title 49, to provide access to modern highway technology to public authorities and the private sector.

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

“(A) make research results and technology available to assist public authorities and the private sector to—

“(i) develop and expand their expertise in highway technology (including pavement, concrete, bridge, and safety management systems) and in contracting practices which favor the use, when cost effective on a life cycle basis, of advanced products and technologies of innovative designs and construction techniques;

“(ii) improve highway and safety technology;

“(iii) enhance programs for the movement of passengers and freight;

“(iv) promote intergovernmental transportation planning, life cycle costing, and project selection in a manner that incorporates state-of-the-art knowledge related to land use planning, environmental protection, and preventive maintenance;

“(v) expand knowledge of implementing life cycle cost assessment, including establishing the appropriate analysis period and discount rates, learning how to value and properly consider user costs, determining tradeoffs between reconstruction and rehabilitation, and establishing methodologies for balancing higher initial costs of new technologies and improved or advanced materials against lower maintenance costs;

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

“(vii) deal effectively with road-related problems by preparing and providing training packages, manuals, guidelines, and technical resource materials;

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

“(C) operate, in cooperation with public authorities and institutions of higher education, technology transfer centers.

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

“(4) FUNDING.—Funds authorized for carrying out this subsection shall be available for obligation in the same manner as if such funds were apportioned

under chapter 1 of this title, and such funds shall remain available for obligation for a period of 3 years after the last day of the fiscal year for which the funds are appropriated.

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

“(1) GENERAL AUTHORITY.—The Secretary may, acting either independently or in cooperation with other Federal departments, agencies, and instrumentalities, make grants for fellowships for any purpose for which research, technology development, or technology transfer is authorized by this section.

“(2) IMPLEMENTATION.—The Secretary shall implement a transportation fellowship program for the purpose of attracting qualified students to the field of transportation research. Such program shall be known as the ‘Dwight David Eisenhower Transportation Fellowship Program’. The program shall offer fellowships to students at institutions of higher education. The recipients of the fellowships must be United States citizens.

“(3) FUNDING.—Funds authorized for carrying out this subsection shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, and such funds shall remain available for obligation for a period of one year after the last day of the fiscal year for which such funds are appropriated.

“(c) TECHNOLOGY PARTNERSHIPS.—

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

“(A) technology transfer and the further development and validation of the results of applied research programs such as the Strategic Highway Research Program, including the Superpave system, to establish a complete program that is well validated and implements performance prediction algorithms;

“(B) providing Federal leadership and support in areas like initiation of regional technology excellence centers, user-producer groups, Long-Term Pavement Performance product implementation, and technology access and exchange programs; and

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

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

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

(1) in subsection (a)(2), by striking “training programs of instruction for Federal Highway Administration” and inserting in lieu thereof “education and training programs focusing on new and rapidly changing surface transportation technologies for Federal”;

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

(3) in subsection (b), by striking “highway department” both places it appears and inserting in lieu thereof “transportation agency”;

(4) in subsection (c), by striking “highway employees” and inserting in lieu thereof “transportation employees”;

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

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

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

“327. Technology transfer and technology partnerships.”

(2) Section 101(a) of title 23, United States Code, is amended by inserting after the undesignated paragraph relating to “Indian reservation roads” the following new paragraph:

“The term ‘institution of higher education’ has the meaning given that term in section 1201 of the Higher Education Act of 1965.”

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

SEC. 6006. LONG-TERM PAVEMENT PERFORMANCE AND ADVANCED RESEARCH.

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

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

“(a) LONG-TERM PAVEMENT PERFORMANCE.—

“(1) CONTINUATION OF PROGRAM.—The Secretary of Transportation may make grants and enter into contracts and cooperative agreements for the continuation of activities under the Long-Term Pavement Performance research program begun under the Strategic Highway Research Program.

“(2) FUNDING.—Funds authorized for carrying out this subsection shall remain available for obligation for a period of three years after the last day of the fiscal year for which such funds are appropriated.

“(b) ADVANCED RESEARCH.—

“(1) AUTHORITY.—The Secretary shall establish an advanced research program, which is consistent with the plan developed under section 6123 of title 49, to address longer-term, higher-risk research that shows potential benefits for improving the durability, longevity, mobility, efficiency, environmental impact, productivity, and safety of surface transportation systems. In carrying out such program, the Secretary shall seek to develop partnerships with the public and private sectors.

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

“(A) characterization of the composition and performance characteristics of basic construction materials used in the infrastructure;

“(B) diagnostics for evaluation of the condition of surface transportation structures to enable the assessment of risks of failure from seismic activity, vibration, and weather;

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

“(D) safety research and technology development;

“(E) environmental research;

“(F) data acquisition and analysis techniques for system condition and performance monitoring; and

“(G) human factors research.

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

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

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

SEC. 6007. STATE RESEARCH.

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

(1) by inserting “and the evaluation and utilization of advanced materials, innovative construction techniques, and advanced technology” after “135 of this title” in paragraph (1)(B);

(2) by amending paragraph (2) to read as follows:

“(2) MINIMUM EXPENDITURES ON RESEARCH, DEVELOPMENT, AND TECHNOLOGY TRANSFER ACTIVITIES.—Not less than 25 percent of the funds that are apportioned to a State for a fiscal year and are subject to subsection (a) shall be expended by the State transportation agency for research, development, and technology transfer activities described in subsection (a) relating to surface transportation systems, in a manner that is consistent with the plan developed under section 6123 of title 49.”; and

(3) by adding at the end the following new paragraph:

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

SEC. 6008. MINIMUM EXPENDITURES ON LONG-TERM RESEARCH PROJECTS.

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

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

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

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

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

SEC. 6009. AUTHORIZATION OF APPROPRIATIONS.

(a) SURFACE TRANSPORTATION RESEARCH AND TECHNOLOGY DEVELOPMENT PROGRAM.—There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account)—

- (1) \$118,000,000 for fiscal year 1998;
- (2) \$118,000,000 for fiscal year 1999; and
- (3) \$118,000,000 for fiscal year 2000,

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

(b) APPLIED RESEARCH AND TECHNOLOGY PROGRAM.—There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account)—

- (1) \$45,000,000 for fiscal year 1998;
- (2) \$45,000,000 for fiscal year 1999; and
- (3) \$45,000,000 for fiscal year 2000,

to carry out section 326 of title 23, United States Code. Where appropriate to achieve the goals established under subsection (a) of that section, the Secretary may allocate such funds to States.

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

- (1) \$10,000,000 for fiscal year 1998;
- (2) \$10,000,000 for fiscal year 1999; and
- (3) \$10,000,000 for fiscal year 2000,

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

(d) NATIONAL HIGHWAY INSTITUTE.—There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account)—

- (1) \$8,000,000 for fiscal year 1998;
- (2) \$8,000,000 for fiscal year 1999; and
- (3) \$8,000,000 for fiscal year 2000,

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

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

- (1) \$2,000,000 for fiscal year 1998;
- (2) \$2,000,000 for fiscal year 1999; and
- (3) \$2,000,000 for fiscal year 2000,

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

(f) TECHNOLOGY PARTNERSHIPS.—There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account)—

- (1) \$10,000,000 for fiscal year 1998;
- (2) \$10,000,000 for fiscal year 1999; and
- (3) \$10,000,000 for fiscal year 2000,

to carry out section 327(c) of title 23, United States Code.

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

- (1) \$15,000,000 for fiscal year 1998;
- (2) \$15,000,000 for fiscal year 1999; and
- (3) \$15,000,000 for fiscal year 2000,

to carry out section 328(a) of title 23, United States Code.

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

- (1) \$12,000,000 for fiscal year 1998;
- (2) \$12,000,000 for fiscal year 1999; and
- (3) \$12,000,000 for fiscal year 2000,

to carry out section 328(b) of title 23, United States Code.

Subtitle B—Intelligent Transportation Systems

SEC. 6021. SHORT TITLE AMENDMENT.

Section 6051 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended by striking “Vehicle-Highway Systems Act of 1991” and inserting in lieu thereof “Transportation Systems Act of 1997”.

SEC. 6022. ESTABLISHMENT AND SCOPE OF PROGRAM.

Section 6052 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended to read as follows:

“SEC. 6052. ESTABLISHMENT AND SCOPE OF PROGRAM.

“(a) **ESTABLISHMENT.**—Subject to the provisions of this part, and consistent with the plan developed under section 6123 of title 49, United States Code, the Secretary shall conduct a program to research, develop, and operationally test intelligent transportation systems and promote implementation of integrated and interoperable intelligent transportation systems as a component of the Nation’s surface transportation systems.

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

“(1) the protection and enhancement of the environment affected by surface transportation;

“(2) the enhancement of safe and efficient operation of the Nation’s highway systems with a particular emphasis on aspects of systems that will increase safety and identification of aspects of the system that may degrade safety;

“(3) the reduction of traffic congestion;

“(4) the development, in advance of Federally supported deployment efforts, of the standards and protocols required to ensure the interoperability of intelligent transportation systems;

“(5) the collection and analysis of data to enable purchasers of such systems to understand how best to apply intelligent transportation systems to their local situations, to understand life cycle costs, and to determine the benefits of their systems in rural and urban settings;

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

“(7) the development of new generations of intelligent transportation systems which are cost-efficient and easier to operate; and

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

SEC. 6023. GENERAL AUTHORITIES AND REQUIREMENTS.

Section 6053 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended—

(1) in subsection (a), by striking “colleges and universities, and State” and inserting in lieu thereof “institutions of higher education and State, regional,”;

(2) by amending subsection (b) to read as follows:

“(b) **STANDARDS.**—Consistent with section 12(d) of the National Technology Transfer and Advancement Act of 1995, the Secretary shall expedite the development, implementation, and maintenance of a National Architecture and of the required voluntary consensus standards and protocols to promote and support the widespread use and evaluation of interoperable intelligent transportation systems technology as a component of the Nation’s surface transportation systems. Not later than 6 months after the date of the enactment of the Surface Transportation Research and Development Act of 1997, the Secretary shall develop a prioritized list of intelligent transportation systems standards. The Secretary shall annually update such list. To the extent practicable, such standards and protocols shall promote interoperability among intelligent transportation systems technologies implemented or likely to be implemented in the future throughout the States. The Secretary may enter into agreements with private sector standards development organizations, with national laboratories, and with the National Institute of Standards and Technology in carrying out this subsection.”;

(3) in subsection (c)—

(A) by inserting “independent” after “requirements 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 previous fiscal year, including standards development;”;
- and
- (3) by striking subsection (d).

SEC. 6025. TECHNICAL, PLANNING, AND OPERATIONAL TESTING PROJECT ASSISTANCE.

Section 6055 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended—

- (1) by striking “vehicle-highway” each place it appears;
- (2) in subsection (c), by striking “for a designated corridor” and inserting in lieu thereof “under a project selected under section 6056”; and
- (3) in subsection (d)—
- (A) by striking “universities” and inserting in lieu thereof “institutions of higher education”;
- (B) by striking “and” at the end of paragraph (1)(A);
- (C) by inserting after paragraph (1)(B) the following new subparagraphs:
- “(C) validate and accelerate the establishment and widespread conformance with the National Architecture and related standards and protocols, including demonstrations and tests related to integrating and increasing the interoperability of currently installed intelligent transportation systems;
- “(D) demonstrate innovative contracting or financing strategies, or address legal, technological, or institutional barriers to the widespread utilization of intelligent transportation systems technology;
- “(E) validate the effectiveness of integrated intelligent transportation systems and infrastructure, including multimodal applications, in enhancing the safety and efficiency of surface transportation;
- “(F) demonstrate advanced traffic management technologies, including the use of fiber optic cables and video, to monitor and control traffic flow and volume; and
- “(G) contribute to the development of a workforce capable of operating and maintaining intelligent transportation systems and infrastructure;”;
- and
- (D) by amending paragraph (3) to read as follows:
- “(3) require that operational tests utilizing Federal funds under this part—
- “(A) are designed for the collection of data to permit objective evaluation of the success of the tests and the derivation of cost-benefit information that is useful to others contemplating the purchase of similar systems; and
- “(B) have a written evaluation of the intelligent transportation systems technologies investigated and of the results of the investigation which—
- “(i) is consistent with the guidelines developed pursuant to section 6053(c); and
- “(ii) includes detailed information on the benefits and costs of the intelligent transportation systems being tested to aid similarly situated localities who are contemplating intelligent transportation systems purchases.”.

SEC. 6026. APPLICATIONS OF TECHNOLOGY.

Section 6056 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended to read as follows:

“SEC. 6056. APPLICATIONS OF TECHNOLOGY.

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

- “(1) validating and accelerating the establishment of national intelligent transportation systems standards and protocols; and
- “(2) technical assistance and training in advanced technologies by institutions of higher education and others.

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

- “(1) help fulfill the goals and objectives outlined in the plan developed under section 6054(a)(1);
- “(2) when applicable, be part of approved plans and programs developed under Statewide and metropolitan transportation planning processes;
- “(3) involve significant non-Federal investment; and

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

“(c) STANDARDIZATION OF INTELLIGENT TRANSPORTATION SYSTEMS.—(1) Funds authorized for carrying out this section may be obligated to deploy intelligent transportation systems technologies only in accordance with provisional or final voluntary consensus standards and protocols necessary to ensure interoperability. In the absence of required standards and protocols, available funds obligated under this section shall be used exclusively for the research and technology development and operational tests of intelligent transportation systems.

“(2) For purposes of this subsection, the term ‘provisional’ means approved by the appropriate subunit of a private sector standards development organization and, in the judgment of the Secretary, not likely to change significantly in its final form.

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

“(1) research on new, unproven intelligent transportation systems which are at least 5 years from utilization, and are designed to reduce congestion, enhance safety, and improve cost effectiveness;

“(2) human factors research, including research in the science of the driving process, to improve the operational efficiency and safety of intelligent transportation systems;

“(3) research on environmental, weather, and natural conditions that impact intelligent transportation systems, including the effects of cold climates;

“(4) research to increase intelligent transportation systems and infrastructure durability; and

“(5) materials or magnetics research.”.

SEC. 6027. FUNDING.

Section 6058 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended—

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

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

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

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

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

(6) in subsection (b), as so redesignated by paragraph (5) of this section, by striking “80 percent” and all that follows through “funding of such activities” and inserting in lieu thereof “50 percent of the cost of such activities”.

SEC. 6028. DEFINITIONS.

Section 6059 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended to read as follows:

“SEC. 6059. DEFINITIONS.

“For the purposes of this part—

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

“(2) the term ‘intelligent transportation systems’ means the development or application of electronics, communications, or information processing (including advanced traffic management systems, commercial vehicle operations, advanced traveler information systems, commercial and advanced vehicle control systems, advanced public transportation systems, satellite vehicle tracking systems, and advanced vehicle communications systems) used singly or in combination to improve the efficiency and safety of surface transportation systems;

“(3) the term ‘National Architecture’ means the common framework adopted by the Secretary, including technical guidelines, details, and standards, to ensure the coordinated development of interoperable intelligent transportation systems; and

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

II. PURPOSE OF THE BILL

The purpose of the bill is to authorize the Department of Transportation to conduct research, development and technology utilization activities for Fiscal Years 1998, 1999, and 2000. The Department's research programs improve the Nation's surface transportation infrastructure by increasing its operational efficiency, durability, performance and safety.

III. BACKGROUND AND NEED FOR THE LEGISLATION

Authorizing legislation for federal surface transportation programs expires at the end of FY1997. The existing federal framework was created by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). During the 102nd Congress, the House Committee on Science introduced and passed the Surface Transportation Research and Development Act of 1991. Several provisions from the legislation were incorporated into the Research Title of ISTEA.

ISTEA increased annual funding for surface transportation research and development and created new research initiatives including the Intelligent Transportation Systems (ITS) program. The legislation also established a framework for cooperation among the Federal Government, industry, and universities on surface transportation research. Finally, the Act established that the federal role in surface transportation research and development should be to sponsor and coordinate research and development on new technologies that seek to provide safer, more affordable transportation systems for the future.

Applications of new transportation technologies developed through research have proven to increase the effective capacity of many elements of the Nation's surface transportation system. Legislative action is needed to continue federal surface transportation research and development efforts. Since research and innovation is an on-going process, it is important to provide a stable, multi-year commitment to the programs within the surface transportation research and development portfolio.

IV. SUMMARY OF HEARINGS

On February 27, 1997, the Technology Subcommittee held a legislative hearing entitled: Surface Transportation, Research Needs for the Next Century. Witnesses included: Mr. Mortimer L. Downey, Deputy Secretary, Department of Transportation; The Honorable David L. Winstead, Secretary, State of Maryland, Department of Transportation; and Mr. Robert J. Skinner, Jr., Executive Director, Transportation Research Board, National Research Council.

Mr. Mortimer Downey, testifying as Deputy Secretary, U.S. Department of Transportation, testified that science and technology are key solutions to many of the challenges in environment, congestion and safety that we face in the 21st Century. He stated that a 1 percent improvement in transportation efficiency could save the economy \$100 billion over a decade, as well as making a more competitive economy. The role at the federal level is critical because neither the other sectors of government nor industry, which con-

sists of many small providers, have the resources for intensive research.

Mr. David L. Winstead, testifying as Secretary, State of Maryland, Department of Transportation, stated that States take the benefits of federal research, apply it to their needs, but also integrate local universities in that effort to make sure that resources and universities are being fully utilized. He testified that last year Maryland had the lowest level of fatalities on their highway system since 1968. Part of the reduction can be attributed to benefits of federal safety programs. He stressed that it is important for the Federal Government to provide the seed money for research since there is little incentive for industry or state and local governments to make that kind of investment in transportation research and development.

Mr. Robert J. Skinner, Jr., testifying as Executive Director, Transportation Research Board, National Research Council, emphasized that the Transportation Research Board's mission is to promote innovation and progress in transportation through research. Even though highway research programs are decentralized and the overall highway research program is difficult to understand, it does provide a solid foundation for highway innovation given the structure of the industry it serves. He stated that research programs need to be less conservative and more comprehensive.

On April 23, 1997, the Technology Subcommittee held the second in a series of hearings on surface transportation research. Following the first Subcommittee on Technology transportation hearing in February, Subcommittee Chairwoman Constance Morella and Full Committee Ranking Member George E. Brown, Jr., introduced H.R. 860, the Surface Transportation Research and Development Act of 1997. The legislation authorizes appropriations for the Department of Transportation to carry out surface transportation R&D programs, including the Intelligent Transportation System (ITS) program, for Fiscal Years 1998–2003. This hearing reviewed the private sector views on the effectiveness of the Federal Government's current role in surface transportation R&D. It also identified ways to encourage increased private sector surface transportation R&D. The hearing also determined the appropriate prioritization of funding for surface transportation R&D through Fiscal Year 2003.

Witnesses included: Mr. Noah Rifkin, Senior Program Manager, Transportation Group, Calspan SRL; Mr. Richard Braun, Treasurer, Board of Directors, Intelligent Transportation Society of America; Mr. Hank Dittmar, Executive Director, Surface Transportation Policy Project; and Dr. C. Michael Walton, P.E., Chair, Transportation Policy Board, American Society of Civil Engineers.

Mr. Noah Rifkin, testifying as Senior Program Manager, Transportation Group, Calspan SRL, discussed his support for the current version of the Intermodal Surface Transportation Efficiency Act (ISTEA) in particular the R&D segments of the bill, and provided some thoughts on how the Administration's National Economic Crossroads Transportation Efficiency Act (NEXTEA) may be strengthened even further. Mr. Rifkin said he supports a larger percentage of investment of federal dollars for the Nation's transportation enterprise. He summarized saying he supports ISTEA

and suggests that Congress reassess its priorities, tune its focus, and reaffirm its national commitment to assure the success of NEXTEA.

Mr. Richard Braun, testifying as Treasurer, Board of Directors, Intelligent Transportation Society of America stated that the ITS initiative is vital. He gave several examples where technology can meet the Nation's growing traffic needs. Mr. Braun highlighted many technologies already in place in several major cities. He also suggested several ITS components for inclusion in NEXTEA.

Mr. Hank Dittmar, testifying as Executive Director, Surface Transportation Policy Project expressed his support for surface transportation research and development. He also suggested that the R&D program be guided by an overall strategic agenda that reflects the goals contained in ISTEA and cited several elements for inclusion in the federal surface transportation research program. Mr. Dittmar recommended expanding current surface transportation R&D technology programs to include more policy research. He emphasized the important role of the Federal Government in research and technology development activities.

Dr. C. Michael Walton, testifying as Chair, Transportation Policy Board, American Society of Civil Engineers, discussed his support for ISTEA and the benefits it offers, such as increased partnership opportunities among government, the private sector and universities. He expressed continued support of NEXTEA. He stressed the importance of developing another strategic plan for NEXTEA and offered several suggestions to be included in that plan, particularly continued research and development of ITS.

V. COMMITTEE ACTIONS

On September 17, 1997, the Full Committee marked up the legislation (H.R. 860) which was introduced by the Subcommittee Chairwoman, Mrs. Connie Morella and Full Committee Ranking Member George Brown, Jr. The legislation was adopted, as amended (by voice vote) and ordered reported to the full House for consideration (by voice vote). Amendments to the legislation were offered in the following order:

1. Manager's En Bloc Substitute Amendment offered by Science Committee Chairman Sensenbrenner and Mr. Brown. The amendment was adopted by voice vote.

VI. SUMMARY OF MAJOR PROVISIONS OF THE BILL

The legislation provides \$491 million in contract authority for each of the Fiscal Years 1998, 1999 and 2000 to the Department of Transportation to carry out surface transportation research and development (R&D) programs and activities designed to improve the safety, efficiency, and effectiveness of the surface transportation system. The legislation provides funding to three main categories that encompass the Department's surface transportation R&D portfolio:

Surface Transportation Research and Technology Development—including research in the areas of pavements, structures, materials, policy, planning, environment, safety, and motor carriers (\$160 million for each Fiscal Years 1998, 1999, and 2000);

Technology Transfer and Applied Research—including the National Highway Institute, Local Technical Assistance Program, Transportation Fellowships, University Research, Technology Partnerships, and the Applied Research and Technology Development Program (\$96 million for each Fiscal Years 1998, 1999, and 2000); and,

Intelligent Transportation Systems and Infrastructure (\$235 million for each Fiscal Years 1998, 1999, and 2000).

Consistent with the Government Performance and Results Act (P.L. 102–61), the legislation takes important steps to require the Department to develop a “strategic roadmap” for surface transportation research with clear goals and objectives, and the necessary framework for measuring progress. The Department is required to coordinate its R&D efforts with other federal and state agencies, institutes of higher education, and the private sector to enhance the exchange of information on transportation R&D activities and to minimize redundancy and costs of research. The National Research Council and stakeholders in the private sector will play an important role in the Department’s strategic planning process.

The legislation consolidates the current University Research Institutes and the University Transportation Centers into a single program. Selection of all centers participating in the program is established through a competitive, merit-based process. The program requires one center to be established in each of the 10 regions that comprise the Federal Boundary System, while authorizing the Secretary to designate up to 10 additional centers with themes to be determined by the Secretary. Finally, the legislation ensures that basic and long-term R&D will not be neglected by requiring that 15 percent of the funds made available by the Act be expended on basic research and or long-term applied research projects which are expected to have a duration of 10 years or more.

The legislation authorizes a new Community and Environmental Research Program to provide State and local transportation officials with the tools and knowledge necessary to understand better the environmental and community impacts of transportation decisions. Finally, H.R. 860 includes provisions requiring the Department to conduct research on the use of recycled and renewable materials to be used as transportation fuels; to restrict Department of Transportation funds from being used to “lobby” or influence pending legislation; to express a “Sense of Congress” that the Department should give a high priority to correcting the Year 2000 problem in the Department’s computer systems; and to require Committee notification if funds made by this legislation are reprogrammed for other purposes.

VII. SECTION-BY-SECTION ANALYSIS (BY TITLE AND SECTION) AND COMMITTEE VIEWS

TITLE VI—RESEARCH

Subtitle A—Programs and Activities

Section 1. Short Title.

This section cites this Act as the “Surface Transportation Research and Development Act of 1997.”

Section 2. Purposes.

This section states the purposes of the Act.

Section 3. Limitations.

(a) *Prohibition of Lobbying Activities*—This subsection prohibits the use of funds authorized by this Act for any activity whose purpose is to influence any federal, state, or local legislation. This section does not prevent employees of the departments and agencies from communicating with members of state and local governments, or Members of Congress, to conduct public business.

(b) *Limitation on Appropriations*—This subsection disallows authorization of funds which are not specifically authorized to be appropriated by this Act for FY 1998, or by an Act of Congress in succeeding fiscal years.

(c) *Eligibility for Awards*—This subsection requires the head of each federal agency for which funds are authorized under this Act to exclude, for a period of 5 years, any person who received funds for a project not subject to competitive, merit-based review process after FY1997. It is not applicable to the long-standing Cooperative Research and Development Agreement program nor awards to persons who are members of a class specified by law for which assistance is awarded according to formula provided by law.

Committee View

The Committee is committed to ensuring that awards for research and education are used solely for those purposes. Funds should not be used for any purpose, other than that specified in the award. The Committee, however, does not exclude appropriate communications between the Executive Branch and the Congress.

This section emphasizes the Committee's position that the only funds authorized to be appropriated for the Department of Transportation's surface transportation research and development programs are made available through this Act. It is the Committee's position that authorizations designating specific sums are required for appropriations of those sums to be authorized.

The Committee has a long-standing position that awards should be based on a competitive merit-based process. Merit review allows taxpayers' dollars to be spent in the most cost-effective manner.

Section 4. Notice.

If any funds of this Act, or amendments made by this Act, are subject to reprogramming which requires notice to be given to the Appropriations Committees of the House of Representatives and the Senate, notice of such action shall be concurrently provided to the Committee on Science and Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

If any program, project, or activity of the Department of Transportation is preparing to undergo any major reorganization, the Secretary shall notify the Committee on Science, Transportation and Infrastructure, and Appropriations of the House of Representatives, and the Committees on Appropriations and Commerce, Science, and Transportation of the Senate of such preparation.

Committee View

The Committee believes that such notice must be given if it is to carry out its oversight responsibilities under the Rules of the House.

Section 5. Sense of Congress on the Year 2000 Problem.

This section expresses a sense of Congress that the Department of Transportation should give high priority to correcting the Year 2000 problem in all of its computer systems to ensure effective operation in the Year 2000 and beyond. The Department needs to assess immediately the risk of the problem upon their systems and develop a plan and a budget to correct the problem for its mission-critical programs. The Department also needs to begin consideration of contingency plans, in the event that certain systems are unable to be corrected in time.

Committee View

Despite knowing of the problem for years, the Federal Government has yet to create an adequate strategy to address the Year 2000 problem. The Committee believes Congress should continue to take a leadership role in raising awareness about the issue with both government and the private sector.

The potential impact on federal programs if the Year 2000 problem is not corrected in an effective and timely manner is substantial and potentially serious. If federal computers are not prepared to handle the change of date on January 1, 2000, there is a risk to all government systems and the programs they support. It is imperative that such corrective action be taken to avert disruption to critical Federal Government programs.

Section 6001. Transportation Research and Technology Development.

This section adds a new chapter 61 to subtitle III of title 49, United States Code. Section 6101 authorizes the Secretary to carry out a program of research and technology development in support of the Department's mission and in accordance with the plan developed under Section 6123. The program shall include: strategic planning and policy analysis; research and technology development; collection and analysis of research data and results; systems engineering and assessment; technology demonstrations and operational tests; and technology transfer and skills development.

Section 6102 provides the Secretary transactional authority to enter into contracts, grants and cooperative agreements with any public or private sector entity.

Section 6121 requires the Secretary to establish a strategic planning process, consistent with the Government Performance and Results Act (section 306 of title 5, U.S.C.) to determine priorities for transportation research and development, coordinate federal activities, and to measure the results of those activities.

Section 6122 requires the Secretary to implement planning to: integrate the Department's research and technology development with all other public and private research; prevent duplication of activities; develop methods for evaluating the comparative utility, costs, and impacts of various transportation alternatives; and, provide for independent validation of assumptions.

Section 6123(a) requires the Secretary to develop an integrated surface transportation research and technology plan.

Subsection (b) requires the contents of the plan to identify the Department's surface transportation research and technology goals and objectives, including: enhancement of advanced and long-term research and technology development; development of a seamless transportation system; and enhancement of the role of universities. The plan must also include a description of the roles of the Department and other federal agencies in achieving the goals; a description of the roles of each federal agency in collecting and analyzing research results from other countries and from other fields and industries that may have applications for the surface transportation sector; a description for the Department's overall strategy, and the role of each operating administrations in carrying out the plan over the next 5 years; an assessment of how state and local research and technology development activities are contributing to the achievement of the goals; details of the Department's surface transportation research and technology development programs, including performance goals, resources needed to achieve those goals, and performance indicators as described in the Government Performance and Results Act (section 1115(a) of title 31, U.S.C.), for the next 5 years; significant comments on the plan from outside sources; and responses to significant comments obtained from the National Research Council and other advisory bodies.

Subsection (c) requires cooperation with industry in carrying this chapter and strengthening the manufacturing capabilities of U.S. firms in order to produce products for transportation systems.

Subsection (d) requires the Secretary to enter into an agreement with the National Research Council to review each strategic plan or revision required under section 306 of title 5 U.S.C.; performance plan required under section 1115 of title 31, U.S.C.; and program performance report required under section 1116 of title 31, U.S.C.

Subsection (e) requires the Secretary to submit to Congress and to the Office of Management and Budget a strategic plan as described in section 306(a) of title 5, U.S.C., which includes the plan developed under this section, within 1 year after the date of enactment. The plan shall be updated and revised as further required in section 306(a) of title 5, U.S.C.

Subsection (f) requires the plans and reports under section 1115 and 1116 of title 31, U.S.C. to include: an analysis of the relationship between those results and the goals identified under subsection (b)(1), including the methodology used for assessing the results; a description of any surface transportation research and technology development initiatives undertaken during the previous fiscal year which were not included in the plan developed under subsection (a), and any significant changes in the plan from the previous year's plan; and a list of all surface transportation research and technology development grants, contracts, and cooperative agreements entered into by the Department that were not competitively awarded on the basis of merit review.

Section 6124 requires the Secretary to submit an annual report to Congress describing merit review procedures for research and technology development and performance measurement procedures.

The procedures must be developed in consultation with the National Science Foundation and the National Institute of Standards and Technology.

Section 6125 further directs the Secretary to develop model procurement procedures that encourage the use of advanced technologies and to develop model transactions for carrying out federal transportation research and technology development with other federal and state agencies.

Section 6126 designates the Deputy Secretary of Transportation to coordinate implementation of this subchapter.

Section 6127 authorizes \$5,000,000 for Fiscal Years 1998, 1999, and 2000 to carry out this subchapter. Funds authorized shall be available for obligation for a period of 2 years after the last day of the fiscal year for which funds were made available.

Section 6131 (a) requires the Secretary, acting through the Deputy Secretary, to coordinate the efforts of the Department to enhance the role of institutions of higher education in transportation research and technology development and technology transfer.

Subsection (b) gives the Secretary the authority to make grants and enter into contracts and cooperative agreements with institutions of higher education to provide assistance to carry out the Department's research and technology development and technology transfer responsibilities and programs.

Subsection (c) requires the Secretary to coordinate the university research; disseminate the results, including, to the extent possible, dissemination through the National Technical Information Service; and, at least annually, consistent with the plan developed under Section 6123, review and evaluate the priorities of such activities and their effectiveness in carrying out this section.

Section 6132 (a) requires the Secretary to make grants to institutions of higher education to establish and operate one university transportation center in each of the 10 regions that comprise the Federal Regional Boundary System.

Subsection (b) allows grants to establish and operate up to 10 other university transportation centers to address transportation research, development, training, technology transfer, and policy issues designated by the Secretary, consistent with Section 6101 and the plan developed under Section 6123.

Subsection (c) requires the Secretary to select the recipients through a competitive, independent, peer-reviewed process on the basis of: the research and technology development resources available to the recipient; the capability of the recipient to provide leadership in making national and regional contributions towards the solution of immediate and long-range transportation problems; the recipient's demonstrated ability to disseminate results of transportation research through a statewide or region wide technology transfer program; and the strategic plan the recipient proposes to carry out under the grant.

Subsection (d) requires each university transportation center established and operated under this section to conduct: competitively awarded, peer reviewed research; a program that includes multidisciplinary course work and participation in research; and an ongoing program of transportation technology transfer.

Subsection (e), as a condition for receiving a grant under subsection (a) or (b), requires the recipient to agree to maintain total expenditures from all sources, other than under this section, for the university transportation center and related research activities at a level at least equal to the average level of expenditures for such activities in the 2 fiscal years prior to award of the grant.

Subsection (f) states that a grant under subsection (a) or (b) shall not exceed 50 percent of the cost of establishing and operating the university transportation center and related research activities the recipient carries out for the fiscal year or years for which the grant is made.

Section 6133 Subsection (a) authorizes the Secretary to establish a program for awarding grants to researchers at primarily undergraduate institutions who involve undergraduate students in research on subjects of relevance to transportation. Grants may be awarded under this section for: research projects carried out at undergraduate institutions; research projects that combine research at primarily undergraduate institutions with other research supported by the Department.

Subsection (b) requires the Secretary to establish and publish the criteria for the awarding of grants under this section in the Federal Register within 6 months after the date of enactment of the Act.

Subsection (c) establishes the criteria for the awarding of the grants to be: the relevance of the research to the plan developed under Section 6123; the scientific and technical merit of the proposed research; and the potential for participation by undergraduate students in the proposed research.

Subsection (d) establishes that grants shall be awarded under this section on the basis of evaluation of proposals through a competitive, merit-based process.

Section 6134 authorizes \$20,000,000 to be appropriated to the Secretary for Fiscal Years 1998, 1999, and 2000, for carrying out sections 6132 and 6133.

Section 6141 requires the Secretary to establish a Community and Environmental Impact Research Program to assess the relationships between transportation modes, programs and projects and their environmental and community impacts.

Subsection (b) requires the program to include research designed to: develop transportation alternatives that improve access and reduce negative impacts; reduce emissions; develop more accurate models for evaluating alternative transportation control measures and alternative transportation system designs; improve understanding of the factors that contribute to the demand for transportation; develop indicators of performance of transportation systems to facilitate analysis of potential alternatives; develop more comprehensive information regarding the role of trails in facilitating accessibility and mobility within communities; and examine the effects of transportation demand on the use of communities and other information technologies.

Subsection (c) allows the Secretary to make competitive-merit based grants, cooperative agreements, and contracts to carry out this section.

Subsection (d) requires the Secretary to establish and maintain a repository for summary data and results for federally sponsored projects carried out pursuant to this section.

Subsection (e) authorizes \$6,000,000 for each Fiscal Years 1998, 1999, and 2000 to carry out this section.

Section 6142 (a) requires the Secretary to establish a Transportation-Environment Cooperative Research Program lead by an Independent Governing Board to recommend environmental and energy conservation, technology, and technology transfer research projects related to transportation.

Subsection (b) requires the Secretary to enter into an agreement with the National Academy of Sciences under which the Academy will award grants through a competitive, merit-based, peer-reviewed process, for carrying out research recommended by the independent governing board.

Subsection (c) authorizes \$4,000,000 for each of the Fiscal Years 1998, 1999, and 2000 to carry out this section.

Committee View

The program under this section provides authority to conduct a comprehensive surface transportation research, development and technology transfer program.

As the Committee seeks to improve the performance of the federal investment in surface transportation research, the Secretary is required to establish a performance-based strategic planning process consistent with the Government Performance and Results Act of 1993 (GPRA). The Committee strongly believes in the GPRA process. The strategic planning process under this section will address deficiencies in the current program, as identified by the General Accounting Office, Transportation Research Board, and other transportation research and development stakeholders, by setting a strategic direction, defining national priorities, coordinating federal efforts and evaluating the impact of the federal investment in surface transportation R&D. As envisioned by the GPRA, the strategic plan will be developed and include review and comment from industry, the National Research Council and other advisory boards. The plan will be submitted to Congress within one year after enactment and updated as required by the GPRA.

The Committee recognizes that procurement decisions involving federally funded surface transportation projects are made by local transportation officials in thousands of local governmental jurisdictions across the country. Whether or not the surface transportation technologies, products and procedures developed through federal research activities are utilized is largely determined by these local transportation officials. Further complicating the matter is the understandable bias towards the familiar and short-term benefits available through "low-bidder" contracting procedures. The Committee views the Department's surface transportation R&D program broadly and feels it should be used to overcome structural as well as technical barriers to deployments of new surface transportation technologies, products and procedures which have the potential to get more value for surface transportation expenditures. The Committee expects the Secretary to promote the development of

standardized model contracting documents with the goal of making it easier for local officials to favor new technologies.

The University Transportation Centers (UTC) Program has been shown to be an effective means of advancing transportation technology and expertise. The benefits of the research and education programs developed by the UTCs have reached every State in the country. The Committee believes that one of the program's strengths is directly related to the fact that most UTCs had to compete for a grant to participate. This lack of entitlement stimulated a high degree of continuous improvement raising the quality of the entire program. The Committee continues to support participation in the UTC program on a peer-reviewed, competitive basis. To facilitate the creation of one new center without reducing the established funding level for existing centers or the quality of research, the Committee recommends an increase in funding for the program.

The Research grants program involving undergraduate students will support research relevant to federal surface transportation research needs. These schools are a major source of professional capacity for the surface transportation industry and we feel that when these engineers are acquainted with the purposes and practice of research during their university training that they will be more sensitive to innovative ideas throughout their careers. The Committee intends for the program to be modeled after similar programs at other federal entities, like the National Science Foundation, that award competitive, merit-based grants to support research at primarily undergraduate institutions. Each grant must be awarded on the basis of the scientific and technical merit of the proposal made to the program, the potential for the project to involve undergraduate students, and the research credentials of the principal investigator of the project. The process for selecting awards must be competitive in the sense that proposals to the program are broadly solicited and, based on the funding available in a given year, proposals judged to have a relatively higher merit are funded in preference to proposals of lower merit.

Subchapter II establishes the Community and Environment Impact Program (CEIP) a research program to address under-served areas of research as identified in General Accounting Office and Transportation Research Board reviews of the Department of Transportation's surface transportation research and development programs:

"..., federal surface transportation research currently does not adequately address two areas that will grow more important with time. First, it does not adequately focus on the total surface transportation system, giving limited attention to system assessment, policy, and intermodal research. Second, it does not include enough basic, long-term, high-risk research to address complex, persistent problems such as congestion." (p. 3; GAO Sept. 1996 Rept. RCED-96-233; Surface Transportation Research Funding, Federal Role, and Emerging Issues)

"In addition, such topics as estimating the consequences of alternative land use and transportation scenarios for accommodating future growth, pricing and other behavior modification approaches to congestion, and examining prospects for intermodalism and di-

version to non-highway modes need to be examined more fully. Such an effort should involve the entire transportation community and probably should be organized and facilitated by the Secretary of DOT.” (p. 95–96; Special Report 244, Highway Research: Current Programs and Future Directions, TRB NRC 1994).

The Committee recognizes there are research programs within the Federal Highway Administration under which some environmental research is funded. However, research done through the FHWA has been concentrated on highways and adequate research on the efficacy of alternative forms of transportation such as pedestrian and bicycle transportation and non-highway roads has not been undertaken, leaving federal, state and local officials without the data they need to make educated decisions on funding transportation construction projects. In addition, the transportation system as a whole requires additional study to ensure we better understand the movement of people and freight between rail, air, and highway modes. Much of the environmental research at DOT has emphasized the assessment of current impacts on communities and the environment, but little research has been done to understand the aspects of transportation system and land-use design that have contributed to the development of persistent problems such as congestion.

The vast majority of research funding at DOT has been directed to technology development and materials research. While the Committee believes this research is critical, the Committee also feels work needs to be done to supply information about the context in which these technologies will be used. This program is designed to supply the economic, social, and environmental information to enable state and local transportation planners to make the most effective use of new transportation technologies. By creating a distinct program, the Committee clarifies that this type of research should also be a priority for the department and that funds should be made available to the transportation research community through a defined program.

States and local governments must have information and tools to evaluate the impacts of transportation projects on transportation demand; congestion; safety; and movement of people and freight. They must also consider impacts on environmental factors such as water quality; storm water management; air quality; and wetlands as required by federal and state laws. The Committee feels that state and local governments should have a better base of information and a suite of better tools to assist them in their efforts to conform transportation projects to requirements of the Clean Air Act, the National Environmental Policy Act, the Clean Water Act, and the array of other state and local statutes.

The Committee feels this program will provide information and tools necessary to assist state and local governments in their efforts to design and evaluate transportation systems which accomplish the goal of efficiently moving people, goods, and services at the lowest cost and with the fewest negative impacts on communities and the environment.

The Subchapter contains two sections both of which operate on the basis of competitive, merit-based review of research proposals. Section 6141 is administered by the Department of Transportation

in consultation with other federal Departments and Agencies that have an interest in transportation policy. The Committee feels that better cooperation and collaboration between DOT and other federal agencies whose programs are affected by transportation policy is required.

The Secretary is authorized to utilize all standard instruments (e.g. grants, contracts and cooperative agreements) to accomplish this research and to award these through a competitive, merit-based process. The section also creates an information clearing house to ensure that information gathered through this program will be collected and disseminated through a central location and will therefore be readily available to state and local decision-makers.

The Committee included a list of topics that it considers to be of priority for funding and to provide some guidance on the type of research proposals that would be eligible for funding under this program. As indicated in item (3), the development of improved air quality and emission models the transportation system for use by state and local transportation planners. Models need to be more reliable, more user-friendly, and flexible enough to incorporate different modes of transportation that comprise the transportation systems of different planning regions.

The Committee recognizes there is a perception by low-income and minority communities that they are disproportionately impacted by some transportation projects and that they derive fewer benefits from transportation expenditures. Federal and state laws currently require the social and economic impacts of transportation projects be assessed. The Committee feels these debates can best be resolved by doing rigorous studies designed to examine the nature of the relationship between transportation investments and community development. Research in this area, which is sometimes referred to as environmental justice, is eligible for funding under the program.

The Committee also feels that more information is needed on pedestrian and non-motorized transportation. Although many States and local governments are utilizing funds authorized under the Congestion, Mitigation, and Air Quality Improvement Program to improve and build trails for pedestrian and non-motorized transportation, few studies have been done to provide the data to support effective planning and decision-making for whether and where to build bicycle and pedestrian trails and shared-use trails. Over the past 15 years the number of shared-use trails has increased by more than eight-fold. Shared-use trails throughout the country provide opportunities to evaluate the effectiveness of trail establishment and design in different regions on such factors as reduced congestion, improved safety, and improved air quality.

The Transportation-Environment Cooperative Research Program authorized under Section 6142 is modeled on the existing Transit and National Highway Cooperative Research Programs that are currently administered by the Transportation Research Board of the National Academy of Sciences. The Cooperative Research Programs were created to address applied, regional-scale problems in transportation identified by states. The Committee intends the National Academy of Sciences to administer the Transportation-Envi-

ronment Cooperative Research Program in a manner similar to that of the other Cooperative Research Programs.

The Committee created this Cooperative Research Program to ensure that not all research priorities would be set at the federal level. By using an Independent Governing Board to identify research projects for funding, a group of individuals representing state and local government and outside transportation and environmental groups can identify programs that are needed to address applied transportation-environment problems at the local level. Since DOT and other federal agencies are also voting, ex-officio members of the board, duplication of effort will be avoided and better cooperation between federal and state and local research efforts will be facilitated. The Committee provided guidance on the composition of the Independent Governing Board because there is no defined, multi-state organization such as the American Association of State Highway and Transportation Officials (AASHTO) or the Transit Development Corporation (TDC). Members of these multi-state organizations serve as members of the Independent Governing Boards in the existing CRPs.

The Committee provided a list of organizations from which persons could be selected by the Secretary of Transportation in consultation with other Departments and Agencies to serve on the board. The Committee provided the list to serve as guidance to the Secretary as to the range of perspective and expertise that should be represented on the board. Membership can also be derived from other groups or professional backgrounds (e.g., transportation engineers) as appropriate. The Committee would also expect appointment to the Independent Governing Board to be of a defined duration and that the rotation of membership would be designed to maintain the balance among perspectives, expertise, and geographic location. Once the IGB is established, a policy for rotations should also be established by the Secretary to ensure a balance between experienced and new membership on the Committee to maintain continuity over time.

The Committee expects the advisory board to build upon the preliminary work done by the participants in the two conferences held to identify critical transportation environmental research needs in 1991 and 1996 published in Transportation Research Board Circulars 389 and 469 in developing their recommendations. These documents identify the type of research needs this program is intended to fulfill.

Section 6002. Surface Transportation Research and Technology Development Program.

Amends subsection 307 of title 23, U.S.C., subsection (a) by striking paragraph (1)(C), and by adding new subsections (C) and (D).

Paragraph (a) (2) (C) requires that programs and activities carried out under this section are consistent with the plan developed under section 6123.

Paragraph (a) (2) (D) states that out of the funds authorized under section 6009(a), not more than \$116,000,000 for FY1998, FY1999, and FY2000, and such funds deposited by any cooperating organization, shall be for carrying out subsection (a) and (b). Funds

shall remain available for a period of 3 years after the last day of the fiscal year for which the funds are made available.

Subsection (b) requires the surface transportation research and technology development programs of the Department to be consistent with the plan developed under new section 6123 and to include a coordinated long-term program of research for the development, use, and dissemination of performance indicators to measure the performance of the surface transportation system of the U.S., including indicators for productivity, efficiency, energy use, air quality, congestion, safety, maintenance, and other factors which reflect the overall performance of such system.

Paragraph (b) (2) requires the Department to include a program to improve and expand surface transportation infrastructure research and technology development, including: methods to improve the durability of surface transportation infrastructure facilities and that extend the life of bridge structures, including new and innovative technologies to reduce corrosion and tests simulating seismic activity, vibration, and weather; a research and development program directed toward the reduction of highway transportation costs; research on the use of recycle materials; research and development on the implementation of new and innovative fuel technologies, including biodiesel fuel, that enables recycled and renewable resources to be used as transportation fuels; a program to develop improved evaluation equipment; information technology; new technologies to enhance field construction and rehabilitation techniques; and innovative contracting and specification practices.

Subsection (d) requires the Secretary to make an agreement with the Transportation Research Board of the National Academy of Sciences to conduct a study to determine the goals, purposes, research agenda and projects, administrative structure, and fiscal needs for a new strategic highway research program. In conducting the study, the Board is required to consult with the American Association of State Highway and Transportation Officials and other entities that the board determines necessary. Within 2 years after enactment, the Board shall submit a final report to the House Committee on Science on the results of the study.

Subsection (e) reauthorizes the Seismic Research Program which conducts research on highway vulnerability to seismic activity and develops cost-effective methods to reduce such vulnerability. Of the amounts authorized to be appropriated under 6009(a), not more than \$2,000,000 for each Fiscal Year 1998, 1999, and 2000, shall be available for carrying out this subsection.

Committee View

The Committee recognizes the vital role research and technology development continues to play in support of our Nation's surface transportation system. With transportation demand expected to increase significantly in the next decade and beyond, the system will need to improve to ensure the safe and efficient movement of people and goods. While passenger and commercial travel on highways has increased dramatically in the past 10 years, the Committee is concerned that the federal transportation investment in surface transportation research and technology development has been insufficient to meet the projected demands of the future.

The program under this section shall be conducted in accordance with the surface transportation R&D plan under Section 6123 of this Act and shall include surface transportation research and technology development activities on technologies and procedures associated with: operational efficiency, durability, performance, safety, environmental impacts, renewal and maintenance, inspection and monitoring of condition and performance, improved design and construction concepts and practices, processes, structures, materials, resource use, recycling and reuse of byproduct and waste materials, as well as design and construction principles and technologies specifically relevant to intermodal connection points.

In the area of structures research, the Committee is aware of unique opportunities to conduct non-destructive and destructive testing on certain structures that are in the process of being replaced. Tests simulating seismic activity, vibration and weather which stress the structures to their breaking point offer the potential to improve methods of structure design, construction and rehabilitation. The Committee recommends the Department to conduct this type of structures research.

In conducting the research of recycling and reuse of byproduct and waste materials, the Committee recommends the Department to include research on the use of recycled materials such as paper and plastic fiber reinforcement systems. Research in this area indicates that technically equivalent recycled plastics are potentially much cheaper than the expensive welded fabric, which traditionally has been added to standard concrete for crack control.

The Committee recognizes that there is a need to conduct research and development on energy use and air quality as it relates to surface transportation efficiency. In conducting research on energy use and air quality, the Committee recommends research and development on the implementation of new and innovative fuel technologies, including biodiesel fuel, that enable recycled and renewable resources to be used as fuel. Biodiesel fuel, a renewable fuel product made using virgin soybean oil, may potentially help the U.S. achieve cleaner air and greater energy independence. In the area of environmental research, activities may include, among other things, development of environmentally safe coatings for surface transportation infrastructure to reduce formation of snow pack and ice.

The original SHRP program has yielded over 100 pavement products that combine to save our Nation over \$690 million per year in highway operations and maintenance. Recognizing that many of the benefits of the Strategic Highway Research Program (SHRP) are still being realized and implemented in the field and that new areas could benefit from SHRP-type research, the Committee directs the Secretary to work with the transportation community to study and specify the goals, purposes, needs, agenda and structure for an ongoing SHRP program or similar effort. The study will help to ensure that the Department continues its strong partnership role with State DOTs, the Transportation Research Board and industry to move technology and innovation into common practice.

The Committee continues to support the Seismic Research Program. The program studies the vulnerability of highways and bridges on the Federal-aid system and works to develop and imple-

ment cost-effective methods of retrofitting such systems to improve their seismic performance.

Section 6003. Statistics Research.

Section 111 of title 49, United States Code, is amended by adding a new subsection (h) that authorizes the Secretary to undertake and continue collaborative research and development with public and private entities to compile, analyze, and publish transportation statistics, to develop electronic clearinghouses of the data and information, and to develop and improve methods for sharing geographic data. It authorizes \$500,000 for each of the Fiscal Years 1998, 1999, and 2000 for carrying out this subsection.

Committee View

The Committee continues to recognize the need for a statistical agency within the Department to develop transportation data for important policy purposes and requires the agency to make grants to conduct research and development on new methods and technologies for data collection and dissemination.

Section 6004. Applied Research and Technology Utilization Program.

New section 326 (a) of title 23, United States Code directs the Secretary to identify the three highest priority applied research goals of the plan developed under Section 6123 and to implement an applied research program to achieve those goals. The Secretary is required to give preference to projects that leverage Federal funds against other public or private resources. The Federal share of the cost of any activity under this section shall not exceed 50 percent, and funds shall remain available for obligation for a period of 3 years after the last day of the fiscal year for which funds are appropriated.

Committee View

The Applied Research and Technology Program has proven successful in expanding the adoption of innovative technologies to increase the efficiency, durability and safety of our Nation's surface transportation infrastructure. The section will build on the program's past successes by requiring the Secretary to identify 3 clearly defined technology goals. Once the goals are approved by Congress, the Department would develop and implement a program to achieve the goals. The program would focus limited R&D funds on a defined set of program areas that will result in significant, tangible benefits to transportation users. The Committee believes that preference should be given to projects that leverage federal funds with significant contributions from the private sector and that the federal share shall not exceed 50 percent for any project.

Section 6005. Technology Transfer and Technology Partnerships.

The new section is added at the end of Chapter 3 of title 23, United States Code. Subsection (a), Local Technical Assistance Program, authorizes the Secretary to carry out a transportation assistance program, consistent with section 6123 of title 49, to provide modern highway technology to public authorities and the private sector. Further, the Secretary is authorized to make grants and enter into contracts and cooperative agreements for technology

transfer activities that make research results and technology available to public authorities and the private sector; to identify, package and deliver highway technology to local jurisdictions to assist in developing and expanding their ability to deal effectively with road related problems; and to operate technology transfer centers. Funds appropriated through this new section shall not exceed 50% of the cost of operating and maintaining a technology transfer center, except for centers operated by or through American Indian tribal governments. Funds authorized for carrying out this subsection shall be available for obligation for a period of 3 years after the last day of the fiscal year for which funds were appropriated.

Subsection (b), Dwight David Eisenhower Transportation Fellowship Program, allows the Secretary to make grants for research fellowships for which research, technology development, or technology transfer is authorized by this section. The purpose of the program is to attract qualified students to the field of transportation research. The recipients of the fellowships must be United States citizens. Funds authorized to carry out this subsection shall be available for one year after the last day of the fiscal year for which funds were appropriated.

Subsection (c), Technology Partnerships, allows the Secretary to make competitive grants, contracts, and cooperative agreements in a manner consistent with the plan developed under new section 6123 of title 49, to States or institutes of higher learning. Purposes of the partnerships include the technology transfer and further development and validation of the results of applied research programs, such as the Strategic Highway Research Program; providing Federal leadership in areas like initiation of regional technology centers of excellence, user-producer groups, Long-Term Pavement Performance product implementation, and technology access and exchange programs; and, dissemination of information to States, academia, and industry. Funds authorized to carry out this subsection shall be available for a period of 3 years after the last day of the fiscal year for which funds are appropriated.

Subsection (b), National Highway Institute, amends section 321 of title 23, United States Code, to emphasize that education and training programs and activities of the Institute should focus on new and rapidly changing surface transportation technologies. The new subsection also clarifies that all fees collected under the subsection shall be used to defray the costs associated with the development or administration of education and training programs authorized by this subsection.

Committee View

The Local Technical Assistance Program (LTAP) improves access to surface transportation technology and serves as the primary channel through which innovative transportation technology and training are delivered to both urban and rural communities. The Committee continues to support funding for the important program.

The section adds concrete to the road and transportation areas of which the LTAP is to expand the knowledge and expertise of rural and local transportation agencies. Concrete is an area where substantial knowledge in the research community has not ade-

quately filtered down to the working level and where universities who train the engineers and other experts involved in highway construction have a major contribution to make in solving the technology transfer problem. For instance, the Committee would like to see the development of partnerships among state Departments of Transportation, industry, and associations to address educational and training needs, to provide testing services and cooperative applied research, to demonstrate new technologies and product applications, and to link architects, engineers, and contractors to speed adoption of industry advancements for commercial benefit to the surface transportation industry, including the area of concrete management.

The section also amends LTAP's modern highway technology to include implementing life-cycle costs assessment and standardized assessments of useful life under various conditions for advanced materials. The Committee understands that one of the impediments to the rapid deployment of advanced materials in local highway construction projects is the difficulty of estimating the contributions these materials can make to reducing life cycle costs of roads, bridges, and other highway structures. The Committee feels a research program geared to understanding the likely useful life of these materials under a variety of conditions will decrease uncertainties associated with innovation and increase the comfort level of local officials as well as their willingness to buy new products.

The Dwight David Eisenhower Transportation Fellowship Program continues to attract qualified students to the field of transportation research. The program is assisting our Nation in developing the professional workforce necessary to face future transportation challenges.

The new Technology Partnerships Program will continue to encourage new transportation technology partnerships between the Department and State, local, private, academic, and other entities. The Committee believes it is essential that the Department continue its strong partnership role with government and the private sector to move technology and innovation into common practice. The Technology Partnership Program will foster such alliances that support research efforts in high-payoff areas.

The National Highway Institute (NHI) continues to provide education and training to federal, state and local transportation agencies in proactive effort to apply state of the art transportation technologies emanating from the Department's R&D programs. The NHI is the leading resource within the Department for providing high quality comprehensive education and training programs tailored to meet the needs of transportation professionals at all levels of the Federal, State and local government, as well as industry.

Section 6006. Long-Term Pavement Performance and Advanced Research.

Subsection (a), Long-Term Pavement Performance, provides the Secretary the authority to make grants, contracts and cooperative agreements for the continuation of activities under the Long-Term Pavement Performance research program begun under the Strategic Highway Research Program. Funds authorized for carrying out this subsection are available for a period of 3 years after the last day of the fiscal year for which such funds are appropriated.

New subsection (b), Advanced Research, requires the Secretary to establish an advanced research program, consistent with section 6123 of title 49, to address longer-term, higher-risk research on surface transportation systems. The Secretary is directed to develop partnerships with the public and private sectors and is authorized to make grants, contracts and cooperative agreements to conduct advanced research on materials, structures, safety and technology development, environment, data acquisition and analysis, and human factors.

Committee View

The Committee recognizes that the Long-Term Pavement Program (LTPP) is at an important point in its 20-year project life. LTPP is the largest pavement performance research project ever undertaken and provides important baseline data on how pavements perform under a wide variety of conditions. Considering that nearly 60% of the Nation's urban and rural roadways are classified as "poor, mediocre or fair" by the Federal Highway Administration, and the enormous costs of maintaining and improving roads, it is important that the Department continue to conduct a long-term program to develop longer-lasting and more cost-effective pavement. The Committee strongly supports the continuation of this important program.

This section requires the Secretary to establish an advanced research program, which is consistent with the goals and objectives developed through the strategic plan. The program must include exploratory research, which involves uncertainty and risks with high potential for payoff. A recent General Accounting Office (GAO) report (Surface Transportation—Research Funding, Federal Role and Emerging Issues) indicates that basic, long-term, high-risk research is not adequately addressed in the current program. The American Association of State Highway and Transportation Officials (AASHTO) also emphasized an increased role for advanced research.

Section 6007. State Research.

The section amends section 307 (c) of title 23 and expands state-wide planning activities to include the evaluation and utilization of advanced materials, innovative construction techniques, and advanced technology. The new section also requires that funds appropriated to a State under this section for research, development and technology transfer activities are done so in a manner consistent with the plan developed under new section 6123 of title 49. Finally, the new section requires States to report annually to the Secretary funding for activities authorized under this section in the previous year.

Committee View

The Committee recognizes that the partnership between the States and the Federal Government developed through the current State Planning and Research Program enables the States to undertake a broad range of research activities designed to address specific transportation problems. The Committee recommends these efforts to continue. The report required by this section is not intended to require any additional reporting from the States. Its pur-

pose is simply to provide a more accurate accounting of each State's surface transportation research and development activities. Currently, it is difficult to track research and to segregate from other permitted uses of funding under this section.

Section 6008. Minimum Expenditures on Long-Term Research Projects.

A new section is added at the end of Chapter 3 of title 23, requiring that a minimum of 15% of the funds made available to the Secretary under this title, not including amounts apportioned to States, shall be expended on long-term research projects which have a duration of more than 10 years.

Committee View

It is the view of the Committee that there are many problems in the surface transportation area which are not conducive to short-term fixes and other areas where longer-term research could lead to significant improvements. Therefore the Committee expects the Department to dedicate a minimum of 15% of its surface transportation R&D portfolio to the investigation of new, emerging or advanced technologies which have potential for long range application in surface transportation R&D.

Section 6009. Authorization of Appropriations.

Subsection (a) authorizes \$118,000,000 for each Fiscal Years 1998, 1999, and 2000, to carry out the Surface Transportation Research and Technology Development Program in section 307 of title 23, U.S.C.

Subsection (b) authorizes \$45,000,000 for each Fiscal Years 1998, 1999, and 2000, to carry out the Applied Research and Technology Program in Section 326 of title 23, U.S.C.

Subsection (c) authorizes \$10,000,000 for each Fiscal Years 1998, 1999, and 2000, to carry out the Local Technical Assistance Program in section 327(a) of title 23, U.S.C.

Subsection (d) authorizes \$8,000,000 for each Fiscal Years 1998, 1999, and 2000, to carry out the National Highway Institute in Section 321 of title 23, U.S.C.

Subsection (e) authorizes \$2,000,000 for each Fiscal Years 1998, 1999, and 2000, to carry out the Transportation Fellowship Program in section 327(b) of title 23, U.S.C.

Subsection (f) authorizes \$10,000,000 for each Fiscal Years 1998, 1999, and 2000, to carry out the Technology Partnerships in Section 327(c) of title 23, U.S.C.

Subsection (g) authorizes \$15,000,000 for each Fiscal Years 1998, 1999, and 2000, to carry out the Long-Term Pavement Performance program in section 328(a) of title 23, U.S.C.

Subsection (h) authorizes \$12,000,000 for each Fiscal Years 1998, 1999, and 2000, to carry out Advanced Research in section 328(b) of title 23, U.S.C.

SUBTITLE B—INTELLIGENT TRANSPORTATION SYSTEMS

Section 6021. Short Title Amendment.

Section 6051 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended by replacing "Vehicle-Highway Systems Act of 1991" with "Transportation Systems Act of 1997."

Section 6022. Establishment and Scope of Program.

Section 6052 (a) is amended to require the Secretary to conduct a program to research, develop, and operationally test intelligent transportation systems in a manner consistent with new section 6123 of title 49. In addition, the Secretary is specifically directed to promote integrated and interoperable systems. Subsection (b) restates and updates the goals of the program.

Section 6023. General Authorities and Requirements.

Subsection (b) amends section 6053 of the Intermodal Surface Transportation Efficiency Act of 1991. Consistent with the section 12(d) of the National Technology Transfer and Advancement Act of 1995, the Secretary is directed to expedite the development, implementation, and maintenance of a National Architecture and of the voluntary consensus standards and protocols to promote the widespread use and evaluation of interoperable intelligent transportation systems technology as a component of the Nation's surface transportation systems. Within six months of enactment, and annually thereafter, the Secretary is directed to develop a list of standards. To the extent practical, the standards and protocols must promote interoperability among systems implemented or likely to be implemented in the future throughout the States. The Secretary may enter into agreements with private sector standards development organizations, with national laboratories, and with the National Institute of Standards and Technology in carrying this subsection.

Subsection (c) is amended to direct the Secretary to provide independent and objective evaluation of field and related operational tests in order to ensure credible results and avoid actual or apparent conflicts of interest.

Section 6024. Strategic Plan, Implementation, and Report to Congress.

Section 6054 of the Intermodal Surface Transportation Efficiency Act is amended to expand the scope of the annual Intelligent Transportation System plan to promote interoperability and integration of systems and to require that systems using Federal funds conform to the National Architecture and to interoperability standards.

The scope of the implementation report in subsection (c) is amended to require the Secretary to describe in detail the extent to which the goals, objectives, and milestones specified in plan were met in the previous year, including standards development. The report is to be submitted concurrently with the surface transportation R&D Strategic Plan under Section 6123 of this Act.

Section 6025. Technical, Planning, and Operational Testing Project Assistance.

Section 6055 of the Intermodal Surface Transportation Efficiency Act, subsection (c) is amended by inserting "under a project selected under section 6056" in lieu of "for a designated corridor."

Subsection (d) is amended by directing the Secretary to give the highest priority to operational test projects that: validate and accelerate the establishment and widespread conformance with the National Architecture and related standards and protocols; demonstrate innovative contracting or financing strategies, or address

barriers to widespread utilization; validate the effectiveness of systems and infrastructure in enhancing the safety and efficiency of surface transportation; demonstrate advance traffic management technologies; and contribute to the development of a workforce capable of operating and maintaining intelligent transportation systems and infrastructure.

Subsection (d) (3) further requires the Secretary to ensure that operational tests utilizing Federal funds under this part are designed for the collection of data to permit objective evaluation and cost-benefit information that is useful to others interested in purchasing similar systems. Finally, the operational tests must have a written evaluation that is consistent with the guidelines outlined in Section 6053 (c) and that includes detailed information on costs and benefits.

Committee Views

The Committee continues to support ITS operational tests as a way of identifying and resolving the technical issues and problems that prevent effective development and deployment of ITS. The technical issues and problems discovered and corrected during this critical period of the innovation process potentially can save millions of dollars down the road. The Committee, however, recognizes that the selection and management of operational tests needs improvement in order to maximize federal investments in ITS. Therefore, in deciding which operational test to fund, the Committee finds it necessary to direct the Secretary to give the highest priority to projects that comply with the requirements of subsection (d). The Committee finds the requirements of (d)(3) especially crucial to States and localities contemplating ITS purchases so that information on the benefits and costs of ITS projects being tested are readily available to assist in transportation investment decisions.

Section 6026. Applications of Technology.

Subsection (a) amends section 6056 (a) by discontinuing the designated IVHS Corridors Program and authorizes the Secretary to conduct a program to promote the utilization of regional integrated, intermodal Intelligent Transportation Systems, including validating and accelerating the establishment of standards and protocols; and technical assistance and training in advanced technologies by institutions of higher education and others.

Subsection (b) establishes priorities for funding projects under this section, including projects which: fulfill the goals and objectives outlined under section 6054 (a); be part of approved plans and programs developed under statewide and metropolitan planning processes; involve significant non-Federal investment; and include analysis of life cycle costs and a financial plan for operation and maintenance.

Subsection (c) (1) requires that funds authorized for carrying out this section to deploy ITS projects may be obligated only in accordance with provisional or final voluntary consensus standards and protocols necessary to ensure interoperability. In the absence of required standards and protocols, available funds obligated under this section shall be used exclusively for the research and technology development and operational tests of ITS.

Subsection (c) (2) clarifies that the term “provisional” means approved by the appropriate subunit of a private sector standards development organization and, in the judgment of the Secretary, is not likely to change significantly in its final form.

Subsection (d) states that funding under this section for projects in metropolitan areas shall be limited to items necessary to limit ITS elements. Further, the subsection requires that 15 percent of funds available for ITS shall be available only for basic research and longer-term applied research, including: research on new ITS projects at least 5 years from utilization designed to reduce congestion, enhance safety, and improve cost effectiveness; human factors research, research on environmental, weather, and natural conditions that impact ITS; research to increase system durability; advanced traffic management technologies; and materials or magnetism research.

Committee Views

The Committee recognizes that the original 83 ITS operational tests have yielded many first generation technologies that can be applied to reduce congestion, improve emergency response time, increase transit system productivity, and reduce the environmental impact of transportation. As more ITS projects are in the process of being deployed with the use of Federal funds, the Committee deems it necessary to institute safeguards to protect the Federal investment in ITS. Subsection (c) requires future deployment of ITS technologies only in accordance with provisional or final voluntary consensus standards and protocols necessary to ensure interoperability. If the necessary standards and protocols are not in place, funds obligated under this section shall be used exclusively for the research and technology development and operational tests. The Committee is firmly committed to ensuring that all future ITS deployments are interoperable.

The development and promulgation of the standards and protocols needed for a national ITS architecture and for compatibility of all ITS systems subsequently deployed must be made the number one priority in this program if we are to avoid widespread waste. Deployments of ITS systems funded under this Act should be conditioned on compatibility with ITS final and provisional standards. The ITS program has instituted a model standards development program that is well underway. For the initial generations of ITS systems, it is clear which standards are needed and the Department has provided substantial assistance to standards development organizations to make sure they are developed on a priority basis. Therefore, the Committee feels that conditioning further deployments of ITS systems on their use of final or provisional standards proposed by standard development organization’s subcommittees, will accelerate the development process even further by making it in all parties’ interests to have standards in place at the earliest possible date. If standards are not in place, funds should be spent on operational tests which will provide information needed to finalize the standards rather than on deployments which may later be incompatible with the standard.

The Committee believes, given the limited funds available and the importance of national deployment of ITS, that all operational

tests and deployments carried out in compliance with this Act must be designed and carried out with subsequent purchasers of similar systems in mind. The government needs to use them as test beds. Operational tests need to be designed for the collection of data and the preparation of reports to permit objective evaluation of the success of the tests and the derivation of cost-benefit information and life-cycle costs that will be useful to others contemplating the purchase of similar systems. Recipients of funds for either operational tests or deployments should be asked to help increase the understanding of what skills workers must possess to operate ITS systems successfully; of what similarly situated governments should consider before committing to purchasing an ITS system including legal, technological, and institutional barriers to deployment; and of how to improve procurement of these systems.

The Committee also recognizes the importance of preserving a minimum of 15 percent of ITS funds for basic research and longer-term applied research. The Committee is especially concerned that adequate emphasis be placed on: human factors research, including research into the science of the driving process, to improve the operational efficiency and safety of intelligent transportation systems; research conducted on environmental, weather, and natural conditions that impact intelligent transportation systems, including effects of cold climates; cutting edge information technologies such as Active Response Geographical Information Systems be used to facilitate effective transportation system decision-making; advanced traffic management technologies, including the use of fiber optic cables and video, to monitor and control traffic flow and volume; and, research on magnetics research.

The Committee believes that ITS advanced systems will be such a fundamental shift in the use of motor vehicles that basic research is necessary to increase our understanding of the driving process. We are concerned that the ITS needs of cold climates will be significantly different than needs in other regions of the country and that the potential impact on ITS of natural phenomena such as earthquakes needs to be understood better. The Committee also recognizes that magnetics and advanced materials will have major roles to play in advanced systems where cars will travel at rapid rates of speed at close differences. Therefore, increased knowledge of magnetics may save time and money over the long term.

Section 6027. Funding.

Section 6058 is amended in subsection (a) by striking "IVHS Corridors Program" as the heading and replacing it with "Applications of Technology," by striking "section 6056" and inserting "this part," by striking "\$71,000,000" and replacing it with "\$235,000,000 for each of the Fiscal Years 1998 through 2000," and by striking subsections (b) and (c) and by redesignating subsections (d) and (e) as subsections (b) and (c), respectively.

Subsection (a) authorizes \$235,000,000 to be appropriated to carry out all ITS activities under this part for each Fiscal Year 1998, 1999, and 2000.

Subsection (d) reduces the federal share on projects from 80 percent to 50 percent, and eliminates the Secretary's ability to waive the federal share.

Committee Views

The Committee recommends a total of \$235,000,000 for each Fiscal Years 1998, 1999, and 2000 to carry out the ITS program, a slight increase over current funding levels. The Committee recommends the Department to continue to work diligently with state and local governments, academia, and the private sector in its three major activities of basic and applied research, field testing, and deployment support. The Committee, however, has determined that it is necessary to establish that the federal share payable on ITS projects shall not exceed 50 percent. In the past, certain projects were funded at 80 percent federal support. The significant potential for commercial ITS applications no longer warrant federal contributions in excess of 50 percent.

VIII. COMMITTEE COST ESTIMATE

Clause 7(a) of Rule XIII of the Rules of the House of Representatives requires each Committee report accompanying each bill or joint resolution of a public character to contain: (1) an estimate, made by such Committee, of the costs which would be incurred in carrying out such bill or joint resolution in the fiscal year in which it is reported, and in each of the five fiscal years following such fiscal year (or for the authorized duration of any program authorized by such bill or joint resolution, if less than five years); (2) a comparison of the estimate of costs described in subparagraph (1) of this paragraph made by such Committee with an estimate of such costs made by any government agency and submitted to such Committee; and (3) when practicable, a comparison of the total estimated funding level for the relevant program (or programs) with the appropriate levels under current law. However, clause 7(d) of that Rule provides that this requirement does not apply when a cost estimate and comparison prepared by the Director of the Congressional Budget Office under section 403 of the Congressional Budget Act of 1974 has been timely submitted prior to the filing of the report and included in the report pursuant to clause 2(1)(3)(C) of Rule XI. A cost estimate and comparison prepared by the Director of the Congressional Budget Office under Section 403 of the Congressional Budget Act of 1974 has been timely submitted prior to the filing of this report and included in Section VII of this report pursuant to clause 2(1)(3)(C) of rule XI.

Clause 2(1)(3)(B) of Rule XI of the Rules of the House of Representatives requires each Committee report that accompanies a measure providing new budget authority (other than continuing appropriations), new spending authority, or new credit authority, or changes in revenues or tax expenditures to contain a cost estimate, as required by section 308(a)(1) of the Congressional Budget Act of 1974 and, when practicable with respect to estimates of new budget authority, a comparison of the total estimated funding level for the relevant program (or programs) to the appropriate levels under current law. H.R. 860 does not contain any new budget authority, credit authority, or changes in revenues or tax expenditures. Assuming that the sums authorized under the bill are appropriated, H.R. 860 does authorize additional discretionary spending, as de-

scribed in the Congressional Budget Office report on the bill, which is contained in Section VII of this report.

IX. CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

U.S. CONGRESS,
U.S. CONGRESSIONAL BUDGET OFFICE,
Washington, DC, October 6, 1997.

Hon. F. JAMES SENSENBRENNER, Jr.,
*Chairman, Committee on Science,
U.S. House of Representatives, Washington, DC.*

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 860, the Surface Transportation Research and Development Act of 1997.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contacts are Kathleen Gramp (for federal costs) and Theresa Gullo (for the state and local impact).

Sincerely,

JUNE E. O'NEILL, *Director.*

H.R. 860—Surface Transportation Research and Development Act of 1997

Summary—H.R. 860 would provide contract authority of \$490.5 million for each of the fiscal years 1998 through 2000 for certain research and development (R&D) activities within the Federal-Aid Highways program. Most of the funding authorized by the bill would support existing R&D initiatives involving intelligent transportation systems, surface transportation, and applied research and technology. The bill would expand the Department of Transportation's planning, evaluation, and reporting requirements and would direct the department to develop model procurement procedures. It also would establish new R&D initiatives involving technology partnerships, advanced research, statistics, and environmental and community impacts. Several provisions would modify the terms and conditions under which DOT's funding is awarded to universities and other performers of R&D, including requirements for peer review.

Following procedures delineated in the Balanced Budget Act of 1997, CBO estimates the total impact of the bill by assuming that the contract authority it provides is extended indefinitely at the level specified for the year 2000. On this basis, CBO estimates that continued funding of these programs at the contract authority levels provided in H.R. 860 would increase discretionary outlays by a total of \$221 million over the 1998–2002 period relative to the amounts assumed in the budget resolution baseline, assuming that appropriations acts contain obligation levels equal to the annual contract authority levels. By providing new contract authority, H.R. 860 would affect direct spending; therefore, pay-as-you-go procedures would apply. However, because outlays from contract authority provided for Federal-Aid Highways are controlled by annual obligation limitations, the pay-as-you-go effect on outlays would be zero in each year.

H.R. 860 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act of 1995 (UMRA).

Estimated cost to the Federal Government—The estimated budgetary impact of implementing H.R. 860 and continuing the programs at the funding levels specified for fiscal year 2000 is shown in the following table. The costs of this legislation fall within budget function 400 (transportation).

	By Fiscal Year, in Millions of Dollars					
	1997	1998	1999	2000	2001	2002
DIRECT SPENDING						
Baseline Spending Under Current Law:						
Estimated Budget Authority ¹	406	417	428	439	451	463
Estimated Outlays	0	0	0	0	0	0
Proposed Changes, Including Baseline Changes in 2001 and 2002 from Enacting H.R. 860:						
Estimated Budget Authority ..	0	74	63	51	39	27
Estimated Outlays	0	0	0	0	0	0
Total Spending (assuming enactment of H.R. 860 and continuation of funding levels beyond 2000):						
Estimated Budget Authority ..	406	491	491	491	491	491
Estimated Outlays	0	0	0	0	0	0
CHANGES IN SPENDING SUBJECT TO APPROPRIATION						
Proposed Changes, Including Baseline Changes in 2001 and 2002 from Enacting H.R. 860:						
Estimated Budget Authority ..	0	0	0	0	0	0
Estimated Outlays ²	0	22	52	58	50	39

¹ The 1997 level is the amount of contract authority provided for these programs for 1997. The 1998–2002 levels are the amounts included in the budget resolution baseline. This contract authority is a subset of the \$20.3 billion provided for Federal-Aid Highways.

² Outlays from the mandatory contract authority provided for these programs are subject to the obligation limit specified in annual appropriations.

Basis of estimate—Enacting H.R. 860 would affect direct spending and spending subject to appropriation. The budget authority provided by the bill is contract authority, which is a form of direct spending. Outlays from this contract authority would be controlled by annual obligation limitations imposed through the appropriations process. Hence, while the contract authority is classified as direct spending (shown in the top portion of the table), the outlays are classified as discretionary (shown in the bottom portion of the table under “Changes in Spending Subject to Appropriation”).

CBO’s estimate of the budgetary effects of enacting H.R. 860 reflects Congressional scorekeeping procedures. Under those guidelines, existing mandatory programs with current-year outlays greater than \$50 million are assumed to continue, even if they expire under current law. Our estimate of budget authority under current law reflects the contract authority included in the budget resolution baseline for 1998 through 2002, which is the amount provided for the R&D programs for 1997 (\$406 million), adjusted for inflation. Because of changes adopted as part of the Balanced Budget Act of 1997, however, we have used a different procedure to estimate the contract authority provided by this bill. That act re-

quires that projections of mandatory spending be based on the assumption that the program continues to operate under the law as in effect immediately before the program's expiration. CBO interprets this requirement to mean that projections of contract authority provided in this bill should equal, in each year after 2000, the level provided for 2000 without an adjustment for inflation (\$490.5 million).

To estimate outlays from the contract authority provided by H.R. 860, we assumed that the obligation limitations customarily established in appropriation acts would equal the contract authority in each year. Outlays are expected to follow historical spending patterns for such R&D programs. Relative to the amounts assumed in the budget resolution baseline, we estimate that implementing H.R. 860—including the assumed continuation of funding after 2000—would increase outlays by a total of \$221 million over the 1998–2002 period.

Pay-as-you-go considerations—The Balanced Budget and Emergency Deficit Control Act of 1985 sets up pay-as-you-go procedures for legislation affecting direct spending or receipts. While H.R. 860 would provide contract authority for highway R&D programs, the outlays for these programs are considered discretionary because they would be subject to annual obligation limitations usually included in appropriations acts. Therefore, the pay-as-you-go effect on outlays from direct spending would be zero each year. The bill would not affect governmental receipts.

Estimated impact on State, local, and tribal governments—H.R. 860 contains no intergovernmental mandates as defined in UMRA. Some of the funds authorized in the bill would be made available to public institutions, including universities, in the form of research grants, technical assistance, and assistance for transportation planning. Most of these grant programs would require recipients to comply with certain conditions and to match the federal funds provided under the program.

H.R. 860 would also create new eligibility criteria for the receipt of grant funds under this bill. Specifically, the bill would exclude grantees from consideration for awards if, in the previous five years, they had received funds under any other federal program that was not subject to a competitive, merit-based award process. Those criteria could reduce the income of public institutions that apply for grants, and change the allocation of funds among grant recipients. CBO cannot predict how the share of research funding awarded to these entities would change because of this provision.

Estimated impact on the private sector—The bill would impose no new private-sector mandates as defined in UMRA.

Estimate prepared by: Federal Costs: Kathleen Gramp; Impact on State, Local, and Tribal Governments: Theresa Gullo.

Estimate approved by: Robert A. Sunshine, Deputy Assistant Director for Budget Analysis.

X. COMPLIANCE WITH PUBLIC LAW 104–4

H.R. 860 contains no unfunded mandates.

XI. COMMITTEE OVERSIGHT FINDINGS AND RECOMMENDATIONS

Clause 2(1)(3)(A) of rule XI of the Rules of the House of Representatives requires each committee report to include oversight findings and recommendations required pursuant to clause 2(b)(1) of rule X. The Committee has no oversight findings.

XII. OVERSIGHT FINDINGS AND RECOMMENDATIONS BY THE COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT

Clause 2(1)(3)(D) of rule XI of the Rules of the House of Representatives requires each Committee report to contain a summary of the oversight findings and recommendations made by the House Government Reform and Oversight Committee pursuant to clause 4(c)(2) of rule X, whenever such findings and recommendations have been submitted to the Committee in a timely fashion. The Committee on Science has received no such findings or recommendations from the Committee on Government Reform and Oversight.

XIII. CONSTITUTIONAL AUTHORITY STATEMENT

Clause 2(1)(4) of rule XI of the Rules of the House of Representatives requires each report of a Committee on a bill or joint resolution of a public character to include a statement citing the specific powers granted to the Congress in the Constitution to enact the law proposed by the bill or joint resolution. Article I, section 8 of the Constitution of the United States grants Congress the authority to enact H.R. 860.

XIV. CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italics, existing law in which no change is proposed is shown in roman):

TITLE 49, UNITED STATES CODE

* * * * *

SUBTITLE I—DEPARTMENT OF TRANSPORTATION

* * * * *

CHAPTER 1—ORGANIZATION

* * * * *

§ 111. Bureau of Transportation Statistics

(a) * * *

* * * * *

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

(1) *the investigation of subjects listed in subsection (c)(1), and for research and development of new methods of data collection, management, integration, dissemination, interpretation, and analysis;*

(2) *development of electronic clearinghouses of transportation data and related information; and*

(3) *development and improvement of methods for sharing geographic data.*

There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account), to the Secretary \$500,000 for each of the fiscal years 1998, 1999, and 2000 for carrying out this subsection. Such funds shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of title 23, United States Code, and such funds shall remain available for obligation for a period of two years after the last day of the fiscal year for which the funds are made available.

* * * * *

SUBTITLE III—GENERAL AND INTERMODAL PROGRAMS

CHAPTER		Sec.
51.	TRANSPORTATION OF HAZARDOUS MATERIAL	5101
	* * * * *	
61.	RESEARCH AND TECHNOLOGY DEVELOPMENT	6101
	* * * * *	

CHAPTER 61—RESEARCH AND 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.

SUBCHAPTER I—GENERAL AND ADMINISTRATIVE

§6101. Authority for research and technology development program

The Secretary of Transportation is authorized to carry out a program of research and technology development activities in support of the Department's mission. Such activities shall be carried out in accordance with the plan developed under section 6123, and shall include—

- (1) strategic planning and policy analysis, including State planning and research;*
- (2) research and technology development;*
- (3) collection, analysis, and dissemination of research data and results;*
- (4) systems engineering and systems assessments;*
- (5) technology demonstrations and operational tests; and*
- (6) technology transfer and skills development.*

§6102. Transactional authority

To carry out the activities described in section 6101, the Secretary of Transportation may enter into contracts, grants, and cooperative agreements with any public or private sector entity.

§6103. Definitions

For purposes of this chapter—

- (1) the term “institution of higher education” has the meaning given that term in section 1201 of the Higher Education Act of 1965; and*
- (2) the term “operating administrations” means the Administrations that are components of the Department of Transportation, and the Bureau of Transportation Statistics.*

SUBCHAPTER II—PLANNING

§6121. Planning

The Secretary of Transportation shall—

- (1) establish a strategic planning process, consistent with section 306 of title 5, United States Code, for the Department of Transportation to determine national transportation research and technology development priorities;*
- (2) coordinate Federal transportation research and technology development activities; and*
- (3) measure the results of those activities and how they impact the performance of the national transportation system.*

§6122. Implementation

In implementing section 6121, the Secretary of Transportation shall—

- (1) provide for the integrated planning, coordination, and consultation among the operating administrations, all other Federal agencies with responsibility for transportation research and technology development, State and local governments, institutions of higher education, industry, and other private and*

public sector organizations engaged in transportation-related research and development activities;

(2) ensure that the Department's research and technology development programs do not duplicate other Federal, State, or private sector research and development programs;

(3) develop and implement methods for evaluating the comparative utility, life cycle costs, and environmental and social impacts of various transportation alternatives; and

(4) provide for independent validation of the scientific and technical assumptions underlying the Department's research and technology development plans.

§6123. Surface transportation research and technology development plan

(a) DEVELOPMENT.—In implementing section 6121, the Secretary of Transportation shall develop an integrated surface transportation research and technology development plan (in this section referred to as the “plan”).

(b) CONTENTS.—The plan shall include—

(1) an identification of the general goals and objectives of the Department of Transportation for surface transportation, including—

(A) enhancement of advanced and long-term research and technology development;

(B) development of a seamless transportation system by integrating transportation modes; and

(C) enhancement of the role of universities in surface transportation research and technology development and technology transfer;

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

(3) a description of the roles of each Federal agency in—

(A) collecting, assessing, and disseminating research and technology development results from other countries that are relevant to surface transportation; and

(B) analyzing and applying research and technology development from other fields and industries that may have applications for the surface transportation sector;

(4) a description of the Department's overall strategy, and the role of each of the operating administrations in carrying out the plan over the next 5 years including a description of procedures for coordination of its efforts with the other operating administrations and with other Federal agencies;

(5) an assessment of how State and local research and technology development activities are contributing to the achievement of the goals identified under paragraph (1);

(6) details of the Department's surface transportation research and technology development programs, including performance goals, resources needed to achieve those goals, and performance indicators as described in section 1115(a) of title 31, United States Code, for the next 5 years for each area of research and technology development;

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

(8) responses to significant comments obtained from the National Research Council and other advisory bodies, and a description of any corrective actions taken pursuant thereto.

(c) *COOPERATION WITH INDUSTRY.*—A primary component of the plan shall be cooperation with industry in carrying out this chapter and strengthening the manufacturing capabilities of United States firms in order to produce products for transportation systems.

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

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

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

(3) program performance report required under section 1116 of title 31, United States Code,

with respect to surface transportation research and technology development.

(e) *STRATEGIC PLAN.*—

(1) *INITIAL TRANSMITTAL.*—Within 1 year after the date of the enactment of the Surface Transportation Research and Development Act of 1997, the Secretary shall transmit to the Director of the Office of Management and Budget and to the Congress a strategic plan as described in section 306(a) of title 5, United States Code, which shall include the plan developed under this section.

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

(f) *PERFORMANCE PLANS AND REPORTS.*—In complying with sections 1115 and 1116 of title 31, United States Code, the Secretary shall include—

(1) a summary of the results for the previous fiscal year of surface transportation research and technology development programs to which the Department of Transportation contributes, along with—

(A) an analysis of the relationship between those results and the goals identified under subsection (b)(1); and

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

(2) a description of significant surface transportation research and technology development initiatives, if any, undertaken during the previous fiscal year which were not in the plan developed under subsection (a), and any significant changes in the plan from the previous year's plan; and

(3) a list of all surface transportation research and technology development grants, contracts, and cooperative agreements entered into by the Department of Transportation that were not competitively awarded on the basis of merit review.

§ 6124. Merit review and performance measurement

The Secretary of Transportation shall, within one year after the date of the enactment of the Surface Transportation Research and Development Act of 1997, transmit to the Congress a report describing competitive merit review procedures for research and technology development, and performance measurement procedures for research and technology development and demonstrations, developed in consultation with the National Science Foundation and the National Institute of Standards and Technology.

§ 6125. Governmental procedures

In implementing section 6121, the Secretary of Transportation shall—

- (1) develop model procurement procedures that encourage the use of advanced technologies; and*
- (2) develop model transactions for carrying out and coordinating Federal and State surface transportation research and technology development activities.*

§ 6126. Role of Deputy Secretary

The implementation of this subchapter shall be coordinated through the Deputy Secretary of Transportation.

§ 6127. Funding

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

- (1) \$5,000,000 for fiscal year 1998;*
- (2) \$5,000,000 for fiscal year 1999; and*
- (3) \$5,000,000 for fiscal year 2000,*

to carry out this subchapter.

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

SUBCHAPTER III—UNIVERSITY RESEARCH

§ 6131. University research in general

(a) COORDINATION.—The Secretary of Transportation, acting through the Deputy Secretary of Transportation, shall coordinate the efforts of the Department to enhance the role of institutions of higher education in transportation research and technology development and technology transfer.

(b) ASSISTANCE.—The Secretary may make grants to and enter into contracts and cooperative agreements with institutions of higher education to provide assistance as the Secretary considers necessary to carry out the Department's research and technology development and technology transfer responsibilities and programs.

(c) PROGRAM COORDINATION.—The Secretary shall—

- (1) provide for coordination of research and technology development and technology transfer activities that institutions of*

higher education carry out with funds provided directly or indirectly by the Department of Transportation;

(2) provide for the dissemination of the results of activities described in paragraph (1), including, to the maximum extent practicable, dissemination through the National Technical Information Service; and

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

§ 6132. National university transportation centers

(a) *REGIONALLY BASED CENTERS.*—The Secretary of Transportation shall make grants to institutions of higher education to establish and operate 1 university transportation center in each of the 10 regions that comprise the Standard Federal Regional Boundary System.

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

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

(1) the research and technology development resources available to the recipient to carry out this section;

(2) the capability of the recipient to provide leadership in making national and regional contributions to the solution of immediate and long-range transportation problems;

(3) the recipient's demonstrated ability to disseminate results of transportation research through a statewide or regionwide technology transfer program; and

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

(d) *OBJECTIVES.*—Each university transportation center established and operated under this section shall conduct—

(1) competitively awarded, peer reviewed transportation research;

(2) an education program that includes multidisciplinary course work and participation in research; and

(3) an ongoing program of transportation technology transfer.

(e) *MAINTENANCE OF EFFORT.*—As a condition of receiving a grant under subsection (a) or (b), the Secretary shall require the recipient to agree to maintain total expenditures from all sources, other than under this section, for the university transportation center and related research activities at a level at least equal to the average level of expenditures for such activities in the 2 fiscal years prior to award of the grant.

(f) *MATCHING REQUIREMENT.*—A grant under subsection (a) or (b) shall not exceed 50 percent of the cost of establishing and operating the university transportation center and related research activities

the recipient carries out for the fiscal year or years for which the grant is made.

§6133. Research grants program involving undergraduate students

(a) *ESTABLISHMENT.*—*The Secretary of Transportation may establish a program for awarding grants to researchers at primarily undergraduate institutions who involve undergraduate students in research on subjects of relevance to transportation. Grants may be awarded under this section for—*

(1) *research projects to be carried out at primarily undergraduate institutions; or*

(2) *research projects that combine research at primarily undergraduate institutions with other research supported by the Department of Transportation.*

(b) *NOTICE OF CRITERIA.*—*Within 6 months after the date of the enactment of the Surface Transportation Research and Development Act of 1997, the Secretary shall establish and publish in the Federal Register criteria for the submittal of proposals for a grant under this section, and for the awarding of such grants.*

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

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

(2) *the scientific and technical merit of the proposed research; and*

(3) *the potential for participation by undergraduate students in the proposed research.*

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

§6134. Authorization of appropriations

(a) *AUTHORIZATION.*—*There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account), to the Secretary of Transportation—*

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

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

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

for carrying out sections 6132 and 6133.

(b) *AVAILABILITY OF FUNDS.*—*Funds authorized for carrying out sections 6132 and 6133 shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of title 23, United States Code, and such funds shall remain available for obligation for a period of two years after the last day of the fiscal year for which such funds are made available under subsection (a).*

**SUBCHAPTER IV—COMMUNITY AND ENVIRONMENTAL
IMPACT RESEARCH**

§6141. Community and Environmental Impact Research Program

(a) *ESTABLISHMENT.*—*The Secretary of Transportation shall establish a Community and Environmental Impact Research Program*

to assess the relationships between transportation modes, programs, and projects and their environmental and community impacts. As appropriate, in carrying out the program, the Secretary shall consult with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Housing and Urban Development, the Secretary of Health and Human Services, and the heads of other appropriate Federal departments and agencies and shall maximize the involvement of State and local governments and metropolitan planning organizations, United States colleges and universities, nonprofit organizations and research institutes, and the private sector.

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

(1) develop transportation alternatives which improve mobility and access, and reduce negative impacts on communities and the environment of transportation systems;

(2) reduce emissions;

(3) develop more accurate models for evaluating alternative transportation control measures and alternative transportation system designs, including pedestrian and bicycle-related measures and system designs which may reduce emissions, and are appropriate for use by metropolitan planning organizations and State and local governments in designing implementation plans to meet air quality standards under the Clean Air Act;

(4) improve understanding of the factors that contribute to the demand for transportation, including transportation system design, demographic change, and land use planning;

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

(6) develop more comprehensive information regarding the role of trails designed for pedestrians, bicycles, and other non-motorized transportation in facilitating accessibility, and mobility within communities; and

(7) examine the effects on transportation demand of the use of communications and other information technologies.

(c) *GRANTS, COOPERATIVE AGREEMENTS, AND CONTRACTS.*—The Secretary may make grants and enter into cooperative agreements and contracts to carry out this section. Awards shall be made on the basis of a competitive, merit-based process.

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

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

(2) Funds authorized for carrying out this section shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of title 23, United States Code, and such

funds shall remain available for obligation for a period of two years after the last day of the fiscal year for which such funds are made available under paragraph (1).

§6142. Transportation-Environment Cooperative Research Program

(a) *INDEPENDENT GOVERNING BOARD.—*

(1) *ESTABLISHMENT.—The Secretary of Transportation, after consultation with the Secretary of Energy, the Administrator of the Environmental Protection Agency, the Secretary of the Interior, the Secretary of Housing and Urban Development, and the Secretary of Health and Human Services, shall establish and maintain an independent governing board to recommend environmental and energy conservation, technology, and technology transfer research projects related to transportation.*

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

(A) *at least 15 persons who are not Federal employees who collectively comprise an appropriate balance of representatives of State transportation and environmental agencies, environmental scientists and engineers, representatives of environmental organizations, and representatives of metropolitan planning organizations and transit operating agencies; and*

(B) *1 representative each from—*

(i) *the Department of Transportation;*

(ii) *the Department of Energy;*

(iii) *the Environmental Protection Agency;*

(iv) *the Department of the Interior; and*

(v) *the Department of Health and Human Services.*

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

(3) *TRAVEL EXPENSES.—Each member of the board shall receive travel expenses, including per diem in lieu of subsistence, in accordance with sections 5702 and 5703 of title 5, United States Code.*

(4) *NONAPPLICABILITY.—Section 14 of the Federal Advisory Committee Act shall not apply to the board.*

(b) *NATIONAL ACADEMY OF SCIENCES.—The Secretary of Transportation shall enter into an agreement with the National Academy of Sciences under which the National Academy of Sciences will award grants, through a competitive, merit-based, peer-reviewed process, for carrying out research recommended by the independent governing board established under subsection (a).*

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

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

after the last day of the fiscal year for which such funds are made available under paragraph (1).

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TITLE 23, UNITED STATES CODE

* * * * *

CHAPTER 1—FEDERAL-AID HIGHWAYS

* * * * *

§ 101. Definitions and declaration of policy

(a) As used in this title, unless the context requires otherwise—
The term “apportionment” in accordance with section 104 of this title includes unexpended apportionments made under prior acts.

The term “construction” means the supervising, inspecting, actual building, and all expenses incidental to the construction or reconstruction of a highway, including bond costs and other costs relating to the issuance in accordance with section 122 of bonds or other debt financing instruments, locating, surveying, and mapping (including the establishment of temporary and permanent geodetic markers in accordance with specifications of the National Oceanic and Atmospheric Administration in the Department of Commerce), resurfacing, restoration, and rehabilitation, acquisition of rights-of-way, relocation assistance, elimination of hazards of railway grade crossings, elimination of roadside obstacles, acquisition of replacement housing sites, acquisition and rehabilitation, relocation, and construction of replacement housing, and improvements which directly facilitate and control traffic flow, such as grade separation of intersections, widening of lanes, channelization of traffic, traffic control systems, and passenger loading and unloading areas. The term also includes capital improvements which directly facilitate an effective vehicle weight enforcement program, such as scales (fixed and portable), scale pits, scale installation, and scale houses and also includes costs incurred by the State in performing Federal-aid project related audits which directly benefit the Federal-aid highway program.

* * * * *

The term “Indian reservation roads” means public roads that are located within or provide access to an Indian reservation or Indian trust land or restricted Indian land which is not subject to fee title alienation without the approval of the Federal Government, or Indian and Alaska Native villages, groups, or communities in which Indians and Alaskan Natives reside, whom the Secretary of the Interior has determined are eligible for services generally available to Indians under Federal laws specifically applicable to Indians.

The term “institution of higher education” has the meaning given that term in section 1201 of the Higher Education Act of 1965.

* * * * *

Chapter 2.—OTHER HIGHWAYS

* * * * *

§ 204. Federal Lands Highways Program

(a) * * *

(b) Funds available for public lands highways shall be used by the Secretary to pay for the cost of construction and improvement thereof. Funds available for park roads, parkways, and Indian reservation roads shall be used by the Secretary or the Secretary of the Interior to pay for the cost of construction and improvement thereof. In connection therewith, the Secretary and the Secretary of the Interior, as appropriate, may enter into construction contracts and such other contracts with a State or civil subdivision thereof or Indian tribe as deemed advisable. In the case of Indian reservation roads, Indian labor may be employed in such construction and improvement under such rules and regulations as may be prescribed by the Secretary of the Interior. No ceiling on Federal employment shall be applicable to construction or improvement of Indian reservation roads. Funds available for each class of Federal lands highways shall be available for any kind of transportation project eligible for assistance under this title that is within or adjacent to or provides access to the areas served by the particular class of Federal lands highways. The Secretary of Interior may reserve funds from the Bureau of Indian Affairs' administrative funds associated with the Indian reservation roads program to finance the Indian technical centers authorized under [section 326] section 327(a).

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Chapter 3.—GENERAL PROVISIONS

Sec.

301. Freedom from tolls.

* * * * *

[326. Education and training program.]

326. *Applied research and technology utilization program.*

327. *Technology transfer and technology partnerships.*

328. *Long-term pavement performance and advanced research.*

329. *Minimum expenditures on long-term research projects.*

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§ 307. Research and planning

(a) RESEARCH AND TECHNOLOGY PROGRAM.—

(1) AUTHORITY OF THE SECRETARY.—

(A) * * *

* * * * *

[(C) RESEARCH FELLOWSHIPS.—

[(i) GENERAL AUTHORITY.—The Secretary may, acting either independently or in cooperation with other Federal departments, agencies, and instrumentalities, make grants for research fellowships for any purpose for which research is authorized by this section.

[(ii) DWIGHT DAVID EISENHOWER TRANSPORTATION FELLOWSHIP PROGRAM.—The Secretary shall establish and implement a transportation research fellowship program for the purpose of attracting qualified students to the field of transportation engineering and research. Such program shall be known as the “Dwight David Eisenhower Transportation Fellowship Program”. Of the funds made available pursuant to paragraph (3) for each fiscal year beginning after September 30, 1991, the Secretary shall expend not less than \$2,000,000 per fiscal year to carry out such program.]

(C) TECHNOLOGICAL INNOVATION.—*The programs and activities carried out under this section shall be consistent with the plan developed under section 6123 of title 49.*

(D) FUNDS.—*Of the amounts authorized to be appropriated under section 6009(a) of the Surface Transportation Research and Development Act of 1997, not more than—*

- (i) \$116,000,000 for fiscal year 1998;
- (ii) \$116,000,000 for fiscal year 1999; and
- (iii) \$116,000,000 for fiscal year 2000,

and such funds as may be deposited by any cooperating organization or person in a special account of the Treasury of the United States established for such purposes, shall be available for carrying out this subsection and subsection (b). Such funds shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, and such funds shall remain available for obligation for a period of three years after the last day of the fiscal year for which the funds are made available.”;

(2) COLLABORATIVE RESEARCH AND DEVELOPMENT.—

(A) IN GENERAL.—For the purposes of encouraging innovative solutions to [highway] surface transportation problems and stimulating the marketing of new technology by private industry, the Secretary is authorized to undertake, on a cost-shared basis, collaborative research and development with non-Federal entities, including State and local governments, foreign governments, colleges and universities, corporations, institutions, partnerships, sole proprietorships, and trade associations which are incorporated or established under the laws of any State.

(B) * * *

* * * * *

[(3) FUNDS.—

[(A) IN GENERAL.—The funds necessary to carry out this subsection and subsections (b), (d), and (e) shall be taken by the Secretary out of administrative funds deducted pursuant to section 104(a) of this title and such funds as may be deposited by any cooperating organization or person in a special account of the Treasury of the United States established for such purposes.

[(B) MINIMUM EXPENDITURES ON LONG-TERM RESEARCH PROJECTS.—Not less than 15 percent of the funds made

available under this paragraph shall be expended on long-term research projects which are unlikely to be completed within 10 years.】

【(4)】 (3) WAIVER OF ADVERTISING REQUIREMENTS.—The provisions of section 3709 of the Revised Statutes (41 U.S.C. 5) shall not be applicable to contracts or agreements entered into under this section.

【(b) MANDATORY CONTENTS OF RESEARCH PROGRAM.—

【(1) INCLUSION OF CERTAIN STUDIES.—The Secretary shall include in the highway research program under subsection (a) studies of economic highway geometrics, structures, and desirable weight and size standards for vehicles using the public highways and of the feasibility of uniformity in State regulations with respect to such standards. The highway research program shall also include studies to identify and measure, quantitatively and qualitatively, those factors which relate to economic, social, environmental, and other impacts of highway projects.

【(2) SHRP RESULTS.—

【(A) IMPLEMENTATION.—The highway research program under subsection (a) shall include a program to implement results of the strategic highway research program carried out under subsection (d) (including results relating to automatic intrusion alarms for street and highway construction work zones) and to continue the long-term pavement performance tests being carried out under such program.

【(B) MINIMUM FUNDING.—Of amounts deducted under section 104(a) of this title, the Secretary shall expend not less than \$12,000,000 in fiscal year 1992, \$16,000,000 in fiscal year 1993, and \$20,000,000 per fiscal year for each of fiscal years 1994, 1995, 1996, and 1997 to carry out this paragraph.

【(3) SURFACE TRANSPORTATION SYSTEM PERFORMANCE INDICATORS.—The highway research program under subsection (a) shall include a coordinated long-term program of research for the development, use, and dissemination of performance indicators to measure the performance of the surface transportation system of the United States, including indicators for productivity, efficiency, energy use, air quality, congestion, safety, maintenance, and other factors which reflect the overall performance of such system.

【(4) SHORT HAUL PASSENGER TRANSPORTATION SYSTEMS.—The Secretary shall conduct necessary systems research in order to develop a concept for a lightweight, pneumatic tire multiple-unit, battery-powered system, in conjunction with recharging stations at strategic locations. The Secretary shall create a potential systems concept and, as part of the surface transportation research and development plan under subsection (b), make recommendations to Congress by January 15, 1993.

【(5) SUPPORTING INFRASTRUCTURE.—The Secretary shall establish a program to strengthen and expand surface transportation infrastructure research and development. The program shall include the following elements:

[(A) Methods and materials for improving the durability of surface transportation infrastructure facilities and extending the life of bridge structures, including new and innovative technologies to reduce corrosion.

[(B) Expansion of the Department of Transportation's inspection and mobile nondestructive examination capabilities, including consideration of the use of high energy field radiography for more thorough and more frequent inspections of bridge structures as well as added support to State highway departments.

[(C) The Secretary shall determine whether or not to initiate a construction equipment research and development program directed toward the reduction of costs associated with the construction of highways and mass transit systems. The Secretary shall transmit to Congress a report containing such determination on or before July 1, 1992.

[(D) The Secretary shall undertake or supervise surface transportation infrastructure research to develop—

[(i) nondestructive evaluation equipment for use with existing infrastructure facilities and for next generation infrastructure facilities that utilize advanced materials;

[(ii) information technologies, including—

[(I) appropriate computer programs to collect and analyze data on the status of the existing infrastructure facilities for enhancing management, growth, and capacity; and

[(II) dynamic simulation models of surface transportation systems for predicting capacity, safety, and infrastructure durability problems, for evaluating planned research projects, and for testing the strengths and weaknesses of proposed revisions in surface transportation operations programs; and

[(iii) new and innovative technologies to enhance and facilitate field construction and rehabilitation techniques for minimizing disruption during repair and maintenance of existing structures.]

(b) *MANDATORY CONTENTS OF PROGRAM.—The surface transportation research and technology development programs of the Department of Transportation shall be consistent with the plan developed under section 6123 of title 49, and shall include—*

(1) a coordinated long-term program of research for the development, use, and dissemination of performance indicators to measure the performance of the surface transportation system of the United States, including indicators for productivity, efficiency, energy use, air quality, congestion, safety, maintenance, and other factors which reflect the overall performance of such system; and

(2) a program to strengthen and expand surface transportation infrastructure research and technology development, including—

(A) methods, materials, and testing to improve the durability of surface transportation infrastructure facilities and

extend the life of bridge structures, including new and innovative technologies to reduce corrosion and tests simulating seismic activity, vibration, and weather;

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

(C) research on the use of recycled materials such as paper and plastic fiber reinforcement systems;

(D) research and development on the implementation of new and innovative fuel technologies, including biodiesel fuel, that enable recycled and renewable resources to be used as transportation fuels;

(E) a surface transportation research program to develop evaluation equipment for infrastructure facilities, including facilities that utilize advanced materials;

(F) information technology including—

(i) appropriate computer programs to collect and analyze data on the status of the existing infrastructure facilities for enhancing management, growth, and capacity; and

(ii) models of surface transportation systems for—

(I) predicting capacity, safety, and infrastructure durability problems;

(II) evaluating planned research projects; and

(III) testing the strengths and weaknesses of proposed revisions in surface transportation operations programs;

(G) new innovative technologies to enhance and facilitate field construction and rehabilitation techniques for minimizing disruption during repair and maintenance of structures; and

(H) an increased understanding of the extent to which traditional contracting and specification practices impede innovation, and of the role of alternative practices and incentives to overcoming barriers to the utilization of advanced technologies and research results.

(c) STATE PLANNING AND RESEARCH.—

(1) GENERAL RULE.—2 percent of the sums apportioned for each fiscal year beginning after September 30, 1991, to any State under sections 104 and 144 of this title and for highway projects under section 103(e)(4) of this title shall be available for expenditure by the State highway department, in consultation with the Secretary, only for the following purposes:

(A) * * *

(B) The planning of future highway programs and local public transportation systems and for planning for the financing thereof, including statewide planning under section 135 of this title *and the evaluation and utilization of advanced materials, innovative construction techniques, and advanced technology.*

* * * * *

(2) MINIMUM EXPENDITURES ON RESEARCH, DEVELOPMENT, AND TECHNOLOGY TRANSFER ACTIVITIES.—Not less than 25 percent of the funds which are apportioned to a State for a fiscal

year and are subject to paragraph (1) shall be expended by the State for research, development, and technology transfer activities described in paragraph (1) relating to highway, public transportation, and intermodal transportation systems unless the State certifies to the Secretary for such fiscal year that total expenditures by the State for transportation planning under sections 134 and 135 will exceed 75 percent of the amount of such funds and the Secretary accepts such certification.】

(2) *MINIMUM EXPENDITURES ON RESEARCH, DEVELOPMENT, AND TECHNOLOGY TRANSFER ACTIVITIES.*—*Not less than 25 percent of the funds that are apportioned to a State for a fiscal year and are subject to subsection (a) shall be expended by the State transportation agency for research, development, and technology transfer activities described in subsection (a) relating to surface transportation systems, in a manner that is consistent with the plan developed under section 6123 of title 49.*

* * * * *

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

【(d) STRATEGIC HIGHWAY RESEARCH PROGRAM.—

【(1) ESTABLISHMENT.—The Secretary, in consultation with the American Association of State Highway and Transportation Officials, shall carry out such research, development, and technology transfer activities as the Secretary determines to be strategically important to the national highway transportation system.

【(2) COOPERATIVE AGREEMENTS.—The Secretary may make grants to, and enter into cooperative agreements with, the American Association of State Highway and Transportation Officials and the National Academy of Sciences to carry out such activities under this subsection as the Secretary determines are appropriate. Advance payments may be made as necessary to carry out the program under this subsection.

【(3) PERIOD OF AVAILABILITY.—Funds set aside to carry out this subsection shall remain available for the fiscal year in which such funds are made available and the three succeeding fiscal years.

【(4) SET ASIDE.—As soon as practicable after the date of the enactment of the Federal-Aid Highway Act of 1987 in fiscal year 1987 and on October 1 of each of fiscal years 1988, 1989, 1990, and 1991, the Secretary shall set aside to carry out this subsection not to exceed $\frac{1}{4}$ of 1 percent of the funds authorized to be appropriated for such fiscal year for the Federal-aid systems, for highway assistance programs under section 103(e)(4) of this title, for bridge replacement and rehabilitation under section 144 of this title, for elimination of hazards under section 152 of this title, and for elimination of hazards of railway-highway crossings under section 130 of this title. In the case of funds authorized for apportionment on the Interstate System, the Secretary shall set aside that portion of such funds (subject to the overall limitation of $\frac{1}{4}$ of 1 percent) in the year

next preceding the fiscal year for which such funds are authorized for such System.

[(5) ANNUAL REPORT.—The Secretary shall transmit a report annually beginning on January 1, 1988, to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives which provides information on the progress and research findings the program conducted under this subsection.

[(6) LIMITATION OF REMEDIES.—

[(A) SAME REMEDY AS IF UNITED STATES.—The remedy against the United States provided by sections 1346(b) and 2672 of title 28, United States Code, for injury, loss of property, personal injury, or death shall apply to any claim against the National Academy of Sciences for money damages for injury, loss of property, personal injury, or death caused by any negligent or wrongful act or omission arising from activities conducted under or in connection with this subsection. Any such claim shall be subject to the limitations and exceptions which would be applicable to such claim if such claim were against the United States. With respect to any such claim, the Secretary shall be treated as the head of the appropriate Federal agency for purposes of sections 2672 and 2675 of such title.

[(B) EXCLUSIVENESS OF REMEDY.—The remedy referred to in subparagraph (A) shall be exclusive of any other civil action or proceeding for the purpose of determining liability arising from any such act or omission without regard to when the act or omission occurred.

[(C) TREATMENT.—Employees of the National Academy of Sciences and other individuals appointed by the President of the National Academy of Sciences and acting on its behalf in connection with activities carried out under this subsection shall be treated as if they are employees of the Federal Government under section 2671 of title 28, United States Code, for purposes of a civil action or proceeding with respect to a claim described in subparagraph (A); and the civil action or proceeding shall proceed in the same manner as any proceeding under chapter 171 of such title, or any proceeding under chapter 171 of such title or action against the United States filed pursuant to section 1346(b) of such title, and shall be subject to the limitations and exceptions applicable to such a proceeding or action.

[(D) REMOVAL.—Upon certification by the Attorney General that a civil action or proceeding with respect to a claim described in subparagraph (A) is being brought in a State court, such civil action or proceeding shall be removed from the State court without bond at any time before trial by the Attorney General to the district court of the United States for the district and division embracing the place wherein it is pending and the proceeding shall be deemed a tort action brought against the United States under the provisions of title 28, United States Code. For purposes of removal, the certification of the Attorney General under this subparagraph shall be conclusive.

[(E) SOURCES OF PAYMENTS.—Payment of any award, compromise, or settlement of a civil action or proceeding with respect to a claim described in subparagraph (A) shall be paid first out of insurance maintained by the National Academy of Sciences, second from funds made available to carry out this subsection, and then from sums made available under section 1304 of title 31, United States Code. For purposes of such section, such an award, compromise, or settlement shall be deemed to be a judgment, award, or settlement payable under section 2414 or 2672 of title 28, United States Code. The Secretary may establish a reserve of funds made available to carry out this subsection for making payments under this paragraph.

[(e) APPLIED RESEARCH AND TECHNOLOGY PROGRAM.—

[(1) ESTABLISHMENT.—The Secretary shall establish and implement in accordance with this subsection an applied research and technology program for the purpose of accelerating testing, evaluation, and implementation of technologies which are designed to improve the durability, efficiency, environmental impact, productivity, and safety of highway, transit, and intermodal transportation systems.

[(2) GUIDELINES.—Not later than 18 months after the date of the enactment of this subsection, the Secretary shall issue guidelines to carry out this subsection. Such guidelines shall include:

[(A) TECHNOLOGIES.—Guidelines on the selection of both foreign and domestic technologies to be tested.

[(B) TEST LOCATIONS.—Guidelines on the selection of locations at which tests will be conducted. Such guidelines shall ensure that testing is conducted in a range of climatic, traffic, geographic, and environmental conditions, as appropriate for the technology being tested.

[(C) DATA.—Guidelines for the scientific collection, evaluation, and dissemination of appropriate test data.

[(3) TECHNOLOGIES.—Technologies which may be tested under this subsection include, but are not limited to—

[(A) accelerated construction materials and procedures;

[(B) environmentally beneficial materials and procedures;

[(C) materials and techniques which provide enhanced serviceability and longevity under adverse climactic, environmental, and load effects;

[(D) technologies which increase the efficiency and productivity of vehicular travel; and

[(E) technologies and techniques which enhance the safety and accessibility of vehicular transportation systems.

[(4) HEATED BRIDGE TECHNOLOGIES.—

[(A) PROJECTS.—As part of the program under this subsection, the Secretary shall carry out projects to assess the state of technology with respect to heating the decks of bridges and the feasibility of, and costs and benefits associated with, heating the decks of bridges. Such projects shall be carried out by installing heating equipment on the

decks of bridges which are being replaced or rehabilitated under section 144 of this title.

【(B) MINIMUM NUMBER OF BRIDGES.—The number of bridges for which heating equipment is installed under this subsection in a fiscal year shall not be less than 10 bridges.

【(5) ELASTOMER MODIFIED ASPHALT.—As part of the program under this subsection, the Secretary shall carry out a project in the State of New Jersey to demonstrate the environmental and safety benefits of elastomer modified asphalt.

【(6) HIGH PERFORMANCE BLENDED HYDRAULIC CEMENT.—As part of the program under this subsection, the Secretary shall carry out a project in the State of Missouri to demonstrate the durability and construction efficiency of high performance blended hydraulic cement.

【(7) THIN BONDED OVERLAY AND SURFACE LAMINATION OF PAVEMENT.—As part of the program under this subsection, the Secretary shall carry out projects to assess the state of technology with respect to thin bonded overlay (including inorganic bonding systems) and surface lamination of pavement, and to assess the feasibility of, and costs and benefits associated with, the repair, rehabilitation, and upgrading of highways and bridges with overlay. Such projects shall be carried out so as to minimize overlay thickness, minimize initial laydown costs, minimize time out of service, and maximize lifecycle durability.

【(8) ALL WEATHER PAVEMENT MARKINGS.—As part of the program under this subsection, the Secretary shall carry out a program to demonstrate the safety and durability of all weather pavement markings.

【(9) TESTING OF HIGHWAY TECHNOLOGIES.—Projects carried out under this subsection to test technologies related to highways shall be carried out on highways on the Federal-aid system.

【(10) TECHNICAL ASSISTANCE.—The Secretary shall provide technical assistance to States and localities in carrying out projects under this subsection.

【(11) ANNUAL REPORT.—Not later than 1 year after the date of the enactment of this subsection, and annually thereafter, the Secretary shall transmit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate a report on the progress and research findings of the program carried out under this subsection.

【(12) FEDERAL SHARE.—The Federal share of the cost of a project carried out under this subsection shall not exceed 80 percent.

【(13) FUNDING.—The Secretary shall expend from administrative and research funds deducted under section 104(a) of this title and funds made available under section 5313(a) of title 49, \$35,000,000 for fiscal year 1992 and \$41,000,000 per fiscal year for each of fiscal years 1993, 1994, 1995, 1996, and 1997 to carry out this subsection. Of such amounts, in each of fiscal years 1992, 1993, 1994, 1995, 1996, and 1997, the Secretary shall expend not less than \$4,000,000 per fiscal year to

carry out projects related to heated bridge technologies under paragraph (4), not less than \$2,500,000 per fiscal year to carry out projects related to thin bonded overlay and surface lamination of pavements under paragraph (7), and not less than \$2,000,000 per fiscal year to carry out projects related to all weather pavement markings under paragraph (8). Amounts made available under this subsection shall remain available until expended and shall not be subject to any obligation limitation.】

(d) *STUDY OF FUTURE STRATEGIC HIGHWAY RESEARCH PROGRAM.*—

(1) *STUDY.*—

(A) *IN GENERAL.*—Not later than 120 days after the date of enactment of this section, the Secretary shall make a grant to, or enter into a cooperative agreement or contract with, the Transportation Research Board of the National Academy of Sciences (referred to in this section as the “Board”) to conduct a study to determine the goals, purposes, research agenda and projects, administrative structure, and fiscal needs for a new strategic highway research program to replace the program established under section 307(d) (as in effect on the day before the date of enactment of this section), or a similar effort.

(B) *CONSULTATION.*—In conducting the study, the Board shall consult with the American Association of State Highway and Transportation Officials and such other entities as the Board determines to be necessary to the conduct of the study.

(2) *REPORT.*—Not later than 2 years after making a grant or entering into a cooperative agreement or contract under subsection (a), the Board shall submit a final report on the results of the study to the Secretary, the Committee on Environment and Public Works of the Senate, and the Committee on Science and the Committee on Transportation and Infrastructure of the House of Representatives.

【(f)】(e) *SEISMIC RESEARCH PROGRAM.*—

【(1) *ESTABLISHMENT.*—The Secretary shall establish a program to study the vulnerability of highways, tunnels, and bridges on the Federal-aid system to earthquakes and develop and implement cost-effective methods of retrofitting such highways, tunnels, and bridges to reduce such vulnerability.

【(2) *COOPERATION WITH NATIONAL CENTER FOR EARTHQUAKE ENGINEERING RESEARCH.*—The Secretary shall conduct the program under this section in cooperation with the National Center for Earthquake Engineering Research at the University of Buffalo.】

(1) *ESTABLISHMENT.*—The Secretary shall establish a program to study the vulnerability of the Federal-aid highway system and other surface transportation systems to seismic activity and to develop and implement cost-effective methods to reduce such vulnerability.

【(3)】(2) *COOPERATION WITH AGENCIES PARTICIPATING IN NATIONAL HAZARDS REDUCTION PROGRAM.*—The Secretary shall further conduct the program under this section in consultation

and cooperation with Federal departments and agencies participating in the National Hazards Reduction Program established by section 5 of the Earthquake Hazards Reduction Act of 1977 and shall take such actions as may be necessary to ensure that the program under this subsection is consistent with—

(A) * * *

* * * * *

(3) *AUTHORIZATION OF APPROPRIATIONS.—(A) Of the amounts authorized to be appropriated under section 6009(a) of the Surface Transportation Research and Development Act of 1997, not more than—*

- (i) \$2,000,000 for fiscal year 1998;
- (ii) \$2,000,000 for fiscal year 1999; and
- (iii) \$2,000,000 for fiscal year 2000,

shall be available for carrying out this subsection.

(B) Funds authorized for carrying out this subsection shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, and such funds shall remain available for obligation for a period of three years after the last day of the fiscal year for which such funds are made available under subparagraph (A).

[(4) **FUNDING.**—Of amounts deducted under section 104(a) of this title, the Secretary shall expend not more than \$2,000,000 per fiscal year in each of fiscal years 1992, 1993, 1994, 1995, 1996, and 1997 to carry out this subsection.]

[(5) **REPORT.**—Not later than 2 years after the date of the enactment of this section, the Secretary shall transmit to the Committee on Public Works and Transportation of the House of Representatives and the Committee on Environment and Public Works of the Senate a report on the progress and research findings of the program carried out under this section.]

[(g)] (f) **DEFINITION.**—As used in this section the term “safety” includes, but is not limited to, highway safety systems, research, and development relating to vehicle, highway, and driver characteristics, accident investigations, communications, emergency medical care, and transportation of the injured.

[(h)] (g) **REPORTS.**—The Secretary shall report to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure *and the Committee on Science* of the House of Representatives in January [1983] 1999, and in January of every second year thereafter, estimates of the future highway needs of the Nation. The biennial reports required under this subsection shall provide the means, including all necessary information, to relate and compare the conditions and service measures used in different years when such measures are changed.

* * * * *

§ 321. National Highway Institute

(a) **ESTABLISHMENT; DUTIES; PROGRAMS.—**

(1) * * *

(2) DUTIES.—The Institute shall develop and administer, in cooperation with the State transportation or highway departments, and any national or international entity, [training programs of instruction for Federal Highway Administration] *education and training programs focusing on new and rapidly changing surface transportation technologies for Federal, State and local transportation and highway department employees, State and local police, public safety and motor vehicle employees, and United States citizens and foreign nationals engaged or to be engaged in highway work of interest to the United States.* The Secretary shall administer, through the Institute, the authority vested in the Secretary by this title or by any other provision of law for the development and conduct of education and training programs relating to highways.

(3) TYPES OF PROGRAMS.—Programs which the Institute may develop and administer may include courses in modern developments, techniques, management, and procedures relating to [highway] *surface transportation* planning, environmental factors, acquisition of rights-of-way, relocation assistance, engineering, safety, construction, maintenance, contract administration, motor carrier activities, and inspection.

(b) SET-ASIDE; FEDERAL SHARE.—Not to exceed $\frac{1}{16}$ of 1 percent of all funds apportioned to a State under section 104(b)(3) for the surface transportation program shall be available for expenditure by the State [highway department] *transportation agency* for payment of not to exceed 80 percent of the cost of tuition and direct educational expenses (but not travel, subsistence, or salaries) in connection with the education and training of State and local [highway department] *transportation agency* employees as provided in this section.

(c) FEDERAL RESPONSIBILITY.—Education and training of Federal, State, and local [highway employees] *transportation employees* authorized by this section shall be provided—

(1) by the Secretary at no cost to the States and local governments for those subject areas which are a Federal program responsibility; or

(2) in any case in which education and training are to be paid for under subsection (b), by the State (subject to the approval of the Secretary) through grants and contracts with public and private agencies, institutions, individuals, and the Institute; except that private agencies and individuals shall pay the full cost of any education and training received by them.

(d) TRAINING FELLOWSHIPS; COOPERATION.—The Institute is authorized, subject to approval of the Secretary, to engage in all phases of contract authority for training purposes authorized by this section, including the granting of training fellowships. The Institute is also authorized to carry out its authority independently or in cooperation with any other branch of the Government, State agency, authority, association, institution, corporation (profit or nonprofit), any other national or international entity[, or any other person].

(e) COLLECTION OF FEES.—

(1) * * *

* * * * *

(4) AMOUNT OF FEES.—The fees assessed and collected under this subsection shall be established in a manner which ensures that the liability of any person or entity for a fee is reasonably based on the proportion of the costs referred to in paragraph (1) which relate to such person or entity. *All fees collected under this subsection shall be used to defray costs associated with the development or administration of education and training programs authorized by this section.*

* * * * *

【§ 326. Education and training program

【(a) AUTHORITY.—The Secretary is authorized to carry out a transportation assistance program that will provide highway and transportation agencies in (1) urbanized areas of 50,000 to 1,000,000 population, and (2) rural areas, access to modern highway technology.

【(b) GRANTS AND CONTRACTS.—The Secretary may make grants and enter into contracts for education and training, technical assistance, and related support service that will—

【(1) assist rural local transportation agencies to develop and expand their expertise in road and transportation areas (including pavement, bridge and safety management systems), to improve roads and bridges, to enhance programs for the movement of passengers and freight, to deal effectively with special road related problems by preparing and providing training packages, manuals, guidelines, and technical resource materials, and developing a tourism and recreational travel technical assistance program;

【(2) identify, package, and deliver usable highway technology to local jurisdictions to assist urban transportation agencies in developing and expanding their ability to deal effectively with road related problems; and

【(3) establish, in cooperation with State transportation or highway departments and universities (A) urban technical assistance program centers in States with 2 or more urbanized areas of 50,000 to 1,000,000 population, and (B) rural technical assistance program centers.

Not less than 2 centers under paragraph (3) shall be designated to provide transportation assistance that may include, but is not necessarily limited to, a “circuit-rider” program, providing training on intergovernmental transportation planning and project selection, and tourism recreational travel to American Indian tribal governments.

【(c) FUNDS.—The funds required to carry out the provisions of this section shall be taken out of administrative funds deducted under section 104(a). The sum of \$6,000,000 per fiscal year for each of the fiscal years 1992, 1993, 1994, 1995, 1996, and 1997 shall be set aside from such administrative funds for the purpose of providing technical and financial support for these centers, including up to 100 percent for services provided to American Indian tribal governments.】

§ 326. Applied research and technology utilization program

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

(b) *FUNDING.*—Funds authorized for carrying out this section shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, except that the Federal share of the cost of any activity under this section shall not exceed 50 percent, and such funds shall remain available for obligation for a period of 3 years after the last day of the fiscal year for which the funds are appropriated.

§ 327. Technology transfer and technology partnerships

(a) *LOCAL TECHNICAL ASSISTANCE PROGRAM.*—

(1) *AUTHORITY.*—The Secretary shall carry out a transportation technology transfer program, which is consistent with the plan developed under section 6123 of title 49, to provide access to modern highway technology to public authorities and the private sector.

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

(A) make research results and technology available to assist public authorities and the private sector to—

(i) develop and expand their expertise in highway technology (including pavement, concrete, bridge, and safety management systems) and in contracting practices which favor the use, when cost effective on a life cycle basis, of advanced products and technologies of innovative designs and construction techniques;

(ii) improve highway and safety technology;

(iii) enhance programs for the movement of passengers and freight;

(iv) promote intergovernmental transportation planning, life cycle costing, and project selection in a manner that incorporates state-of-the-art knowledge related to land use planning, environmental protection, and preventive maintenance;

(v) expand knowledge of implementing life cycle cost assessment, including establishing the appropriate analysis period and discount rates, learning how to value and properly consider user costs, determining tradeoffs between reconstruction and rehabilitation, and establishing methodologies for balancing higher initial costs of new technologies and improved or advanced materials against lower maintenance costs;

(vi) in conjunction with the National Institute of Standards and Technology and other appropriate orga-

nizations, develop standardized estimates of useful life under various conditions for advanced materials of use in surface transportation; and

(vii) deal effectively with road-related problems by preparing and providing training packages, manuals, guidelines, and technical resource materials;

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

(C) operate, in cooperation with public authorities and institutions of higher education, technology transfer centers.

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

(4) **FUNDING.**—Funds authorized for carrying out this subsection shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, and such funds shall remain available for obligation for a period of 3 years after the last day of the fiscal year for which the funds are appropriated.

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

(1) **GENERAL AUTHORITY.**—The Secretary may, acting either independently or in cooperation with other Federal departments, agencies, and instrumentalities, make grants for fellowships for any purpose for which research, technology development, or technology transfer is authorized by this section.

(2) **IMPLEMENTATION.**—The Secretary shall implement a transportation fellowship program for the purpose of attracting qualified students to the field of transportation research. Such program shall be known as the “Dwight David Eisenhower Transportation Fellowship Program”. The program shall offer fellowships to students at institutions of higher education. The recipients of the fellowships must be United States citizens.

(3) **FUNDING.**—Funds authorized for carrying out this subsection shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, and such funds shall remain available for obligation for a period of one year after the last day of the fiscal year for which such funds are appropriated.

(c) **TECHNOLOGY PARTNERSHIPS.**—

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

(A) technology transfer and the further development and validation of the results of applied research programs such as the Strategic Highway Research Program, including the

Superpave system, to establish a complete program that is well validated and implements performance prediction algorithms;

(B) providing Federal leadership and support in areas like initiation of regional technology excellence centers, user-producer groups, Long-Term Pavement Performance product implementation, and technology access and exchange programs; and

(C) dissemination of information to States, academia, and industry.

(2) FUNDING.—Funds authorized for carrying out this subsection shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, and such funds shall remain available for obligation for a period of 3 years after the last day of the fiscal year for which such funds are appropriated.

§328. Long-term pavement performance and advanced research

(a) LONG-TERM PAVEMENT PERFORMANCE.—

(1) CONTINUATION OF PROGRAM.—The Secretary of Transportation may make grants and enter into contracts and cooperative agreements for the continuation of activities under the Long-Term Pavement Performance research program begun under the Strategic Highway Research Program.

(2) FUNDING.—Funds authorized for carrying out this subsection shall remain available for obligation for a period of three years after the last day of the fiscal year for which such funds are appropriated.

(b) ADVANCED RESEARCH.—

(1) AUTHORITY.—The Secretary shall establish an advanced research program, which is consistent with the plan developed under section 6123 of title 49, to address longer-term, higher-risk research that shows potential benefits for improving the durability, longevity, mobility, efficiency, environmental impact, productivity, and safety of surface transportation systems. In carrying out such program, the Secretary shall seek to develop partnerships with the public and private sectors.

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

(A) characterization of the composition and performance characteristics of basic construction materials used in the infrastructure;

(B) diagnostics for evaluation of the condition of surface transportation structures to enable the assessment of risks of failure from seismic activity, vibration, and weather;

(C) design and construction details for composite structures;

(D) safety research and technology development;

(E) environmental research;

(F) data acquisition and analysis techniques for system condition and performance monitoring; and

(G) human factors research.

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

§329. Minimum expenditures on long-term research projects

Not less than 15 percent of the funds made available to the Secretary of Transportation under this title for research and development, not including amounts apportioned to States, shall be expended on basic research and on long-term applied research projects which are expected to have a duration of 10 years or more. Such expenditures may include expenditures made under section 328.

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**INTERMODAL SURFACE TRANSPORTATION EFFICIENCY
ACT OF 1991**

* * * * *

TITLE VI—RESEARCH

* * * * *

**PART B—INTELLIGENT VEHICLE-HIGHWAY
SYSTEMS ACT**

SEC. 6051. SHORT TITLE.

This part may be cited as the “Intelligent [Vehicle-Highway Systems Act of 1991] *Transportation Systems Act of 1997*”.

[SEC. 6052. ESTABLISHMENT AND SCOPE OF PROGRAM.

[(a) **ESTABLISHMENT.**—Subject to the provisions of this part, the Secretary shall conduct a program to research, develop, and operationally test intelligent vehicle-highway systems and promote implementation of such systems as a component of the Nation’s surface transportation systems.

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

[(1) the widespread implementation of intelligent vehicle-highway systems to enhance the capacity, efficiency, and safety of the Federal-aid highway system and to serve as an alternative to additional physical capacity of the Federal-aid highway system;

[(2) the enhancement, through more efficient use of the Federal-aid highway system, of the efforts of the several States to attain air quality goals established pursuant to the Clean Air Act;

[(3) the enhancement of safe and efficient operation of the Nation’s highway systems with a particular emphasis on aspects of systems that will increase safety and identification of aspects of the system that may degrade safety;

[(4) the development and promotion of intelligent vehicle-highway systems and an intelligent vehicle-highway systems

industry in the United States, using authority provided under section 307 of title 23, United States Code;

【(5) the reduction of societal, economic, and environmental costs associated with traffic congestion;

【(6) the enhancement of United States industrial and economic competitiveness and productivity by improving the free flow of people and commerce and by establishing a significant United States presence in an emerging field of technology;

【(7) the development of a technology base for intelligent vehicle-highway systems and the establishment of the capability to perform demonstration experiments, using existing national laboratory capabilities where appropriate; and

【(8) the facilitation of the transfer of transportation technology from national laboratories to the private sector.】

SEC. 6052. ESTABLISHMENT AND SCOPE OF PROGRAM.

(a) *ESTABLISHMENT.*—Subject to the provisions of this part, and consistent with the plan developed under section 6123 of title 49, United States Code, the Secretary shall conduct a program to research, develop, and operationally test intelligent transportation systems and promote implementation of integrated and interoperable intelligent transportation systems as a component of the Nation's surface transportation systems.

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

(1) the protection and enhancement of the environment affected by surface transportation;

(2) the enhancement of safe and efficient operation of the Nation's highway systems with a particular emphasis on aspects of systems that will increase safety and identification of aspects of the system that may degrade safety;

(3) the reduction of traffic congestion;

(4) the development, in advance of Federally supported deployment efforts, of the standards and protocols required to ensure the interoperability of intelligent transportation systems;

(5) the collection and analysis of data to enable purchasers of such systems to understand how best to apply intelligent transportation systems to their local situations, to understand life cycle costs, and to determine the benefits of their systems in rural and urban settings;

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

(7) the development of new generations of intelligent transportation systems which are cost-efficient and easier to operate; and

(8) the completion of the Federal financial role in the Commercial Vehicle Information Systems and Networks and transfer of responsibility for its operations and maintenance to a non-Federal entity by October 1, 2002.

SEC. 6053. GENERAL AUTHORITIES AND REQUIREMENTS.

(a) *COOPERATION.*—In carrying out the program under this part, the Secretary shall foster use of the program as a key component of the Nation's surface transportation systems and strive to transfer federally owned or patented technology to State and local gov-

ernments and the United States private sector. As appropriate, in carrying out the program under this part, the Secretary shall consult with the Secretary of Commerce, the Administrator of the Environmental Protection Agency, the Director of the National Science Foundation, and the heads of other interested Federal departments and agencies and shall maximize the involvement of the United States private sector, **【colleges and universities, and State】** *institutions of higher education and State, regional, and local governments* in all aspects of the program, including design, conduct (including operations and maintenance), evaluation, and financial or in-kind participation.

【(b) STANDARDS.—The Secretary shall develop and implement standards and protocols to promote the widespread use and evaluation of intelligent vehicle-highway systems technology as a component of the Nation’s surface transportation systems. To the extent practicable, such standards and protocols shall promote compatibility among intelligent vehicle-highway systems technologies implemented throughout the States. In carrying out this subsection, the Secretary may use the services of such existing standards-setting organizations as the Secretary determines appropriate.**】**

(b) STANDARDS.—Consistent with section 12(d) of the National Technology Transfer and Advancement Act of 1995, the Secretary shall expedite the development, implementation, and maintenance of a National Architecture and of the required voluntary consensus standards and protocols to promote and support the widespread use and evaluation of interoperable intelligent transportation systems technology as a component of the Nation’s surface transportation systems. Not later than 6 months after the date of the enactment of the Surface Transportation Research and Development Act of 1997, the Secretary shall develop a prioritized list of intelligent transportation systems standards. The Secretary shall annually update such list. To the extent practicable, such standards and protocols shall promote interoperability among intelligent transportation systems technologies implemented or likely to be implemented in the future throughout the States. The Secretary may enter into agreements with private sector standards development organizations, with national laboratories, and with the National Institute of Standards and Technology in carrying out this subsection.

(c) EVALUATION GUIDELINES.—The Secretary shall establish guidelines and requirements for the *independent* evaluation of field and related operational tests carried out pursuant to section 6055, *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.* Any survey, questionnaire, or interview which the Secretary considers necessary to carry out the evaluation of such tests shall not be subject to the requirements of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.).

* * * * *

(e) ADVISORY COMMITTEES.—The Secretary may utilize one or more advisory committees in carrying out this part. Any advisory committee so utilized shall be subject to the Federal Advisory Committee Act. Funding provided for any such committee shall be

available from moneys appropriated for advisory committees as specified in relevant appropriations Acts and from funds allocated for research, development, and implementation activities in connection with the intelligent [vehicle-highway] *transportation* systems program under this part.

SEC. 6054. STRATEGIC PLAN, IMPLEMENTATION, AND REPORT TO CONGRESS.

(a) STRATEGIC PLAN.—

(1) * * *

(2) SCOPE.—The plan shall—

(A) * * *

* * * * *

[(E) provide for the accelerated use of advanced technology to reduce traffic congestion along heavily populated and traveled corridors.]

(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.

* * * * *

(c) IMPLEMENTATION REPORTS.—

(1) * * *

(2) SCOPE OF IMPLEMENTATION REPORTS.—In preparing reports under this subsection, the Secretary shall—

[(A) analyze the possible and actual accomplishments of intelligent vehicle-highway systems projects in achieving congestion, safety, environmental, and energy conservation goals and objectives of the program;]

(A) describe in detail the extent to which the goals, objectives, and milestones specified under subsection (a)(2)(A) were met in the previous fiscal year, including standards development;

* * * * *

[(d) NONTECHNICAL CONSTRAINTS.—

[(1) REPORT TO CONGRESS.—In cooperation with the Attorney General and the Secretary of Commerce, the Secretary shall prepare and submit, not later than 2 years after the date of the enactment of this Act, a report to Congress addressing the non-technical constraints and barriers to implementation of the intelligent vehicle-highway systems program.

[(2) SCOPE OF REPORT.—The report shall—

[(A) address antitrust, privacy, educational and staffing needs, patent, liability, standards, and other constraints, barriers, or concerns relating to the intelligent vehicle-highway systems program;

[(B) recommend legislative and administrative actions necessary to further the program; and

[(C) address ways to further promote industry and State and local government involvement in the program.

[(3) UPDATE OF REPORT.—Not later than 5 years after the date of the enactment of this Act, the Secretary shall prepare

and submit to Congress an update of the report under this subsection.]

SEC. 6055. TECHNICAL, PLANNING, AND OPERATIONAL TESTING PROJECT ASSISTANCE.

(a) **TECHNICAL ASSISTANCE AND INFORMATION.**—The Secretary may provide planning and technical assistance and information to State and local governments seeking to use and evaluate intelligent [vehicle-highway] systems technologies. In doing so, the Secretary shall assist State and local officials in developing plans for areawide traffic management control centers, necessary laws pertaining to establishment and implementation of such systems, and plans for infrastructure for such systems and in conducting other activities necessary for the intelligent [vehicle-highway] systems program.

(b) **PLANNING GRANTS.**—The Secretary may make grants to State and local governments for feasibility and planning studies for development and implementation of intelligent [vehicle-highway] systems. Such grants shall be made at such time, in such amounts, and subject to such conditions as the Secretary may determine.

(c) **ELIGIBILITY OF CERTAIN TRAFFIC MANAGEMENT ENTITIES.**—Any interagency traffic and incident management entity, including independent public authorities or agencies, contracted by a State department of transportation for implementation of a traffic management system [for a designated corridor] *under a project selected under section 6056* is eligible to receive Federal assistance under this part through the State department of transportation.

(d) **OPERATIONAL TESTING PROJECTS.**—The Secretary may make grants to non-Federal entities, including State and local governments, [universities] *institutions of higher education*, and other persons, for operational tests relating to intelligent [vehicle-highway] systems. In deciding which projects to fund under this subsection, the Secretary shall—

(1) give the highest priority to those projects that—

(A) will contribute to the goals and objectives specified in plan developed under section 6054; [and]

(B) will minimize the relative percentage of Federal contributions (excluding funds apportioned under section 104 of title 23, United States Code) to total project costs;

(C) *validate and accelerate the establishment and widespread conformance with the National Architecture and related standards and protocols, including demonstrations and tests related to integrating and increasing the interoperability of currently installed intelligent transportation systems;*

(D) *demonstrate innovative contracting or financing strategies, or address legal, technological, or institutional barriers to the widespread utilization of intelligent transportation systems technology;*

(E) *validate the effectiveness of integrated intelligent transportation systems and infrastructure, including multimodal applications, in enhancing the safety and efficiency of surface transportation;*

(F) demonstrate advanced traffic management technologies, including the use of fiber optic cables and video, to monitor and control traffic flow and volume; and

(G) contribute to the development of a workforce capable of operating and maintaining intelligent transportation systems and infrastructure;

(2) seek to fund operational tests that advance the current state of knowledge and, where appropriate, build on successes achieved in previously funded work involving such systems; and

[(3) require that operational tests utilizing Federal funds under this part have a written evaluation of the intelligent vehicle-highway systems technologies investigated and of the results of the investigation which is consistent with the guidelines developed pursuant to section 6053(c).]

(3) require that operational tests utilizing Federal funds under this part—

(A) are designed for the collection of data to permit objective evaluation of the success of the tests and the derivation of cost-benefit information that is useful to others contemplating the purchase of similar systems; and

(B) have a written evaluation of the intelligent transportation systems technologies investigated and of the results of the investigation which—

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

(ii) includes detailed information on the benefits and costs of the intelligent transportation systems being tested to aid similarly situated localities who are contemplating intelligent transportation systems purchases.

(e) **AUTHORITY TO USE FUNDS.**—Each State and eligible local entity is authorized to use funds provided under this part for implementation purposes in connection with the intelligent [vehicle-highway] systems program.

[SEC. 6056. APPLICATIONS OF TECHNOLOGY.

[(a) **IVHS CORRIDORS PROGRAM.**—The Secretary shall designate transportation corridors in which application of intelligent vehicle-highway systems will have particular benefit and, through financial and technical assistance under this part, shall assist in the development and implementation of such systems.

[(b) **PRIORITIES.**—In providing funding for corridors under this section, the Secretary shall allocate not less than 50 percent of the funds made available to carry out this section to eligible State or local entities for application of intelligent vehicle-highway systems in not less than 3 but not more than 10 corridors with the following characteristics:

[(1) Traffic density (as a measurement of vehicle miles traveled per highway mile) at least 1.5 times the national average for such class of highway.

[(2) Severe or extreme nonattainment for ozone under the Clean Air Act, as determined by the Administrator of the Environmental Protection Agency.

[(3) A variety of types of transportation facilities, such as highways, bridges, tunnels, and toll and nontoll facilities.

[(4) Inability to significantly expand capacity of existing surface transportation facilities.

[(5) A significant mix of passenger, transit, and commercial motor carrier traffic.

[(6) Complexity of traffic patterns.

[(7) Potential contribution to the implementation of the Secretary's plan developed under section 6054.

[(c) OTHER CORRIDORS AND AREAS.—After the allocation pursuant to subsection (b), the balance of funds made available to carry out this section shall be allocated to eligible State and local entities for application of intelligent vehicle-highway systems in corridors and areas where the application of such systems and associated technologies will make a potential contribution to the implementation of the Secretary's plan for the intelligent vehicle-highway systems program under section 6054 and demonstrate benefits related to any of the following:

[(1) Improved operational efficiency.

[(2) Reduced regulatory burden.

[(3) Improved commercial productivity.

[(4) Improved safety.

[(5) Enhanced motorist and traveler performance.

Such corridors and areas may be in both urban and rural areas and may be interstate and intercity corridors. Urban corridors shall have a significant number of the characteristics set forth in subsection (b).]

SEC. 6056. APPLICATIONS OF TECHNOLOGY.

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

(1) validating and accelerating the establishment of national intelligent transportation systems standards and protocols; and

(2) technical assistance and training in advanced technologies by institutions of higher education and others.

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

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

(2) when applicable, be part of approved plans and programs developed under Statewide and metropolitan transportation planning processes;

(3) involve significant non-Federal investment; and

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

(c) *STANDARDIZATION OF INTELLIGENT TRANSPORTATION SYSTEMS.*—(1) Funds authorized for carrying out this section may be obligated to deploy intelligent transportation systems technologies only in accordance with provisional or final voluntary consensus standards and protocols necessary to ensure interoperability. In the absence of required standards and protocols, available funds obligated under this section shall be used exclusively for the research and technology development and operational tests of intelligent transportation systems.

(2) For purposes of this subsection, the term “provisional” means approved by the appropriate subunit of a private sector standards development organization and, in the judgment of the Secretary, not likely to chance significantly in its final form.

(d) FUNDING RESTRICTIONS.—Eligibility for funding under this section for projects in metropolitan areas shall be limited to items necessary to integrate intelligent transportation systems elements. At least 15 percent of funds available for intelligent transportation systems shall be available only for basic research and longer-term applied research, including—

(1) research on new, unproven intelligent transportation systems which are at least 5 years from utilization, and are designed to reduce congestion, enhance safety, and improve cost effectiveness;

(2) human factors research, including research in the science of the driving process, to improve the operational efficiency and safety of intelligent transportation systems;

(3) research on environmental, weather, and natural conditions that impact intelligent transportation systems, including the effects of cold climates;

(4) research to increase intelligent transportation systems and infrastructure durability; and

(5) materials or magnetics research.

* * * * *

SEC. 6058. FUNDING.

(a) **IVHS CORRIDORS PROGRAM** *Applications of Technology*.—There is authorized to be appropriated to the Secretary for carrying out **[section 6056]** *this part*, out of the Highway Trust Fund (other than the Mass Transit Account), **[\$71,000,000 for fiscal year 1992 and \$86,000,000 per fiscal year for each of fiscal years 1993 through 1997. In addition to amounts made available by subsection (b), any amounts authorized by this subsection and not allocated by the Secretary for carrying out section 6056 for fiscal years 1992 and 1993 may be used by the Secretary for carrying out other activities authorized under this part]** *\$235,000,000 for each of the fiscal years 1998 through 2000.*

[(b) OTHER IVHS ACTIVITIES.—There is authorized to be appropriated to the Secretary for carrying out this part (other than section 6056), out of the Highway Trust Fund (other than the Mass Transit Account), \$23,000,000 for fiscal year 1992 and \$27,000,000 per fiscal year for each of fiscal years 1993 through 1997.

[(c) RESERVATION OF FUNDS.—Of the funds made available pursuant to subsection (a), not less than 5 percent shall only be available for innovative, high-risk operational or analytical tests that do not attract substantial non-Federal commitments but are determined by the Secretary as having significant potential to help accomplish long-term goals established by the plan developed pursuant to section 6054.]

[(d)] (b) FEDERAL SHARE PAYABLE.—The Federal share payable on account of activities carried out under section 6056, as well as operational test activities carried out under this part (other than section 6056), shall not exceed **[80 percent of the cost of such activities. The Secretary shall seek maximum private participation in**

the funding of such activities] 50 percent of the cost of such activities.

[(e)] (c) APPLICABILITY OF TITLE 23.—Funds authorized by this section shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of title 23, United States Code; except that the Federal share of the cost of any activity under this section shall be determined in accordance with this section and such funds shall remain available until expended. Such funds shall be subject to the obligation limitation imposed by section 102 of this Act.

[SEC. 6059. DEFINITIONS.

[For the purposes of this part, the following definitions apply:

[(1) IVHS.—The term “intelligent vehicle-highway systems” means the development or application of electronics, communications, or information processing (including advanced traffic management systems, commercial vehicle operations, advanced traveler information systems, commercial and advanced vehicle control systems, advanced public transportation systems, satellite vehicle tracking systems, and advanced vehicle communications systems) used singly or in combination to improve the efficiency and safety of surface transportation systems.

[(2) CORRIDOR.—The term “corridor” means any major transportation route which includes parallel limited access highways, major arterials, or transit lines; and, with regard to traffic incident management, such term may include more distant transportation routes that can serve as viable options to each other in the event of traffic incidents.

[(3) STATE.—The term “State” has the meaning such term has under section 101 of title 23, United States Code.]

SEC. 6059. DEFINITIONS.

For the purposes of this part—

(1) the term “institution of higher education” has the meaning given that term in section 1201 of the Higher Education Act of 1965;

(2) the term “intelligent transportation systems” means the development or application of electronics, communications, or information processing (including advanced traffic management systems, commercial vehicle operations, advanced traveler information systems, commercial and advanced vehicle control systems, advanced public transportation systems, satellite vehicle tracking systems, and advanced vehicle communications systems) used singly or in combination to improve the efficiency and safety of surface transportation systems;

(3) the term “National Architecture” means the common framework adopted by the Secretary, including technical guidelines, details, and standards, to ensure the coordinated development of interoperable intelligent transportation systems; and

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

* * * * *

XV. COMMITTEE RECOMMENDATIONS

On September 17, 1997, a quorum being present, the Science Committee favorably reported the Surface Transportation Research and Development Authorization Act of 1997, by a voice vote, and recommends its enactment.

XVI. COMMITTEE CORRESPONDENCE

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
Washington, DC, September 16, 1997.

Hon. F. JAMES SENSENBRENNER,
Chairman, Committee on Science
U.S. House of Representatives, Washington, DC.

DEAR MR. CHAIRMAN: This letter discharges H.R. 860, to authorize appropriations to the Department of Transportation for surface transportation research and development, and for other purposes, from the Subcommittee on Technology.

H.R. 860 was introduced in the House on February 27, 1997, and Members of this Subcommittee have had time to consider the content of the bill. In doing so, we feel the appropriate forum for this legislation would be in Full Committee. It is my hope that you will afford Members of this Subcommittee an opportunity to comment on this legislation upon its consideration in Full Committee.

Sincerely,

CONSTANCE A. MORELLA,
Chairwoman, Subcommittee
on Technology.
BART GORDON,
Ranking Member, Sub-
committee on Technology.

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
Washington, DC, September 23, 1997.

Hon. BUD SHUSTER,
Chairman, House Committee on Transportation and Infrastructure,
Washington, DC.

DEAR CHAIRMAN SHUSTER: On Wednesday, September 17, the House Committee on Science unanimously approved H.R. 860, as amended by the Sensenbrenner/Brown Substitute Amendment. For your review, a copy of the legislation and accompanying section by section analysis is enclosed.

Pursuant to the discussion between our respective staffs on September 11, we look forward to working with you and the other Members of the Transportation and Infrastructure Committee to reconcile the provisions of H.R. 860 with the research and development provisions of your comprehensive reauthorization legislation. By reaching agreement on the provisions, we would avoid sequential referrals which would further complicate and impede the reauthorization process. As agreed at the September 11 meeting, a research and development title that reflects both of our Committees'

efforts would be offered as a Manager's Amendment to the final reauthorization legislation when it is considered on the House floor.

We look forward to working with you on this important matter.
Sincerely,

F. JAMES SENSENBRENNER, Jr.,
Chairman.
GEORGE E. BROWN, Jr.,
Ranking Minority Member.

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
Washington, DC, March 19, 1998.

Hon. BUD SHUSTER,
Chairman, House Committee on Transportation and Infrastructure,
Washington, DC.

DEAR CHAIRMAN SHUSTER: In recognition of the Senate's completion last week of comprehensive surface transportation reauthorization legislation (S. 1173) which included substantial cuts to surface transportation R&D, we would like to take this opportunity to reiterate our interest in working with you and the other Members of the Transportation and Infrastructure Committee to ensure the research and development provisions of the House surface transportation reauthorization bill (H.R. 2400) are adequately funded.

As you know, the Science Committee unanimously approved H.R. 860 late last year. We appreciate and are encouraged by you and your colleague's interest in reconciling some of the differences in provisions between H.R. 2400 and H.R. 860 as part of a Manager's Amendment when the legislation is considered on the House floor. Although the provisions of H.R. 860 are similar in nature to those of Title VI of H.R. 2400, the total funding provided for surface transportation research and development programs in the first year of H.R. 2400 is \$76 million less than H.R. 860. This gap narrows in the out-years, but is never fully closed.

As a result of the Senate's recent action, we believe the overall funding level for surface transportation research and development in H.R. 2400 needs to be raised and ask that you make every effort to increase R&D funding to the level provided in H.R. 860.

Again, we appreciate your efforts and look forward to working with you on this important matter.

Sincerely,

F. JAMES SENSENBRENNER, Jr.,
Chairman.
GEORGE E. BROWN, Jr.,
Ranking Minority Member.

HOUSE OF REPRESENTATIVES,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC, March 27, 1998.

Hon. F. JAMES SENSENBRENNER, Jr.,
Chairman, Committee on Science, Washington, DC.

DEAR MR. CHAIRMAN: Thank you for your letter of March 25, 1998, regarding H.R. 2400, the Building Efficient Surface Trans-

portation and Equity Act of 1998. Your assistance in expediting consideration of the bill is very much appreciated.

I agree that there are certain provisions in the bill that are of jurisdictional interest to the Committee on Science and I agree that by foregoing a sequential referral the Committee on Science is not waiving its jurisdiction. Be assured that I will continue to work with you to develop an acceptable Manager's amendment for Floor consideration.

I would be pleased to support the representation of your Committee in any conference on H.R. 2400 regarding matters within the jurisdiction of the Committee on Science. I intend to include this exchange of letters in the Committee report on the bill. Thank you for your cooperation and your continued leadership and support in surface transportation matters.

With warm personal regards, I am.

Sincerely,

BUD SHUSTER, *Chairman.*

XVII. ADDITIONAL VIEWS

ADDITIONAL VIEWS OFFERED BY REPRESENTATIVE EDDIE BERNICE JOHNSON OF TEXAS

I am very pleased that the Committee included the Community and Environmental Impact Program (CEIP). This program expands the nature and scope of research in the area of transportation to include an examination of environmental justice, an issue of great importance to all of our communities.

Residents of minority and low-income communities often have objected to federal transportation projects because of: (1) the perception that their communities would bear a disproportionate share of adverse impacts associated with projects; (2) projects are not designed to adequately address the transportation, economic development, and environmental quality needs of low-income communities; and (3) residents are not provided adequate opportunities to participate in the planning and design phases of these projects or in the development of regional transportation policy. The wide range of issues encompassed by these concerns fall under the label, "environmental justice." Much of the debate still focuses on what role transportation policy has played in facilitating and sustaining declines in environmental, social, and economic conditions in some communities. We must do more to understand this issue and to develop infrastructure projects that result in more equitable distribution of benefits to all communities.

This debate can only be resolved through rigorous studies which examine the nature of the relationship between transportation investments and community development. However to date, few studies have been done and there are no programs to fund such work. The establishment of the CEIP ensures that research proposals addressing environmental justice issues will be eligible for funding. Item number (5) of Section 6142 was included to encourage the Department to fund research into the development of indicators which could be used to assess the broad range of impacts on communities and the environment that need to be considered under existing laws. Research proposals which address methods to: (1) identify disproportionately high and adverse effects on low-income and minority populations; (2) identify and assess the effectiveness of mitigation strategies; and (3) better define and evaluate transportation policies and programs which may result in disproportionate adverse effects on communities are eligible and should receive every consideration for funding under this program.

The National Environmental Policy Act (NEPA) of 1969 [P.L. 91-109] requires that assessments of the socio-economic impacts of major federal projects be included in environmental impact statements. Executive Order 12898 of February 11, 1994: *Federal Actions To Address Environmental Justice in Minority Populations* explicitly requires each federal agency to analyze environmental, economic, and social effects of federal actions on minority communities and low-income communities. Federal agencies are also required to identify measures to mitigate any potential negative effects of federal projects on these communities. The intention of these laws will only be fulfilled when we have the information available to design and implement transportation policy in a manner that recognizes the needs and respects the rights of individuals living in low-income communities. When it comes to the design and construction of transportation projects, equity should receive as much consideration as efficiency. Knowledge gained through the CEIP will help to make that possible.

EDDIE BERNICE JOHNSON.

XVIII. PROCEEDINGS OF THE FULL COMMITTEE MARKUP

**FULL COMMITTEE MARKUP OF H.R. 860, TO
AUTHORIZE APPROPRIATIONS TO THE DE-
PARTMENT OF TRANSPORTATION FOR SUR-
FACE TRANSPORTATION RESEARCH AND
DEVELOPMENT, AND FOR OTHER PUR-
POSES**

WEDNESDAY, SEPTEMBER 17, 1997

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
Washington, DC.

The Committee met, pursuant to call, at 2:19 p.m. in room 2318, Rayburn House Office Building, Hon. F. James Sensenbrenner, Jr., Chairman of the Committee, presiding.

Chairman SENSENBRENNER. Next up is the bill H.R. 860, which the clerk will report.

Ms. SCHWARTZ. H.R. 860, to authorize the appropriations to the Department of Transportation for surface transportation research and development and for other purposes.

Chairman SENSENBRENNER. Without objection, the bill will be considered as read and open for amendment at any point.

[The text of H.R. 860 follows:]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Surface Transportation Research and Development Act of 1997”.

SEC. 2. DEFINITION.

For purposes of this Act, the term “Secretary” means the Secretary of Transportation.

SEC. 3. SURFACE TRANSPORTATION RESEARCH, DEVELOPMENT, AND TECHNOLOGY PROGRAM.

(a) SURFACE TRANSPORTATION RESEARCH, DEVELOPMENT, AND TECHNOLOGY PROGRAM.—There are authorized to be appropriated to the Secretary for fiscal years 1998, 1999, 2000, 2001, 2002, and 2003 such sums as are necessary to carry out surface transportation research, development, and technology activities.

(b) HIGHWAY RESEARCH, DEVELOPMENT, AND TECHNOLOGY.—Of the sums authorized to be appropriated by subsection (a), such sums as are necessary are authorized to be appropriated to the Secretary to carry out highway research, development, and technology activities, including—

(1) motor carrier transportation activities; and

(2) all phases of highway planning and development (including construction, operation, modernization, development, design, maintenance, safety, financing, and traffic conditions).

(c) INTELLIGENT TRANSPORTATION SYSTEMS.—Of the sums authorized to be appropriated by subsection (a), such sums as are necessary are authorized to be appropriated to the Secretary to carry out activities to research, develop, and operationally test intelligent transportation systems as a component of the Nation's surface transportation systems.

SEC. 4. UNIVERSITY-BASED TRANSPORTATION RESEARCH AND DEVELOPMENT.

(a) UNIVERSITY TRANSPORTATION RESEARCH AND DEVELOPMENT CENTERS.—There are authorized to be appropriated to the Secretary for fiscal years 1998, 1999, 2000, 2001, 2002, and 2003 such sums as are necessary to award competitive grants to universities to operate centers for transportation and development.

(b) UNIVERSITY TRANSPORTATION RESEARCH AND DEVELOPMENT INSTITUTES.—There are authorized to be appropriated to the Secretary for fiscal years 1998, 1999, 2000, 2001, 2002, and 2003 such sums as are necessary to award competitive grants to universities to operate transportation research and development institutes.

(c) RESEARCH AND DEVELOPMENT FELLOWSHIPS.—There are authorized to be appropriated to the Secretary for fiscal years 1998, 1999, 2000, 2001, 2002, and 2003 such sums as are necessary to carry out the Dwight David Eisenhower Transportation Fellowship Program for the purpose of attracting qualified students to the field of transportation research, development, and engineering.

SEC. 5. COLLABORATIVE RESEARCH AND DEVELOPMENT.

(a) IN GENERAL.—For the purposes of encouraging innovative solutions to highway problems and stimulating the marketing of new technology by private industry, the Secretary is authorized to undertake, on a cost-shared basis, collaborative research and development with non-Federal entities, including State and local governments, foreign governments, colleges and universities, corporations, institutions, partnerships, sole proprietorships, and trade associations which are incorporated or established under the laws of any State.

(b) AGREEMENTS.—In carrying out this section, the Secretary may enter into cooperative research and development agreements, as such term is defined under section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a).

(c) FEDERAL SHARE.—The Federal share payable on account of activities carried out under a cooperative research and development agreement entered into under this section shall not exceed 50 percent of the total cost of such activities; except that, if there is substantial public interest or benefit, the Secretary may approve a higher Federal share. All costs directly incurred by the non-Federal partners, including personnel, travel, and hardware development costs, shall be treated as part of the non-Federal share of the cost of such activities for purposes of the preceding sentence.

(d) UTILIZATION OF TECHNOLOGY.—The research, development, or utilization of any technology pursuant to a cooperative research and development agreement entered into under this section, including the terms under which the technology may be licensed and the resulting royalties may be distributed, shall be subject to the Stevenson-Wydler Technology Innovation Act of 1980.

(e) AUTHORIZATION.—For fiscal years 1998, 1999, 2000, 2001, 2002, and 2003, there are authorized to be appropriated to the Secretary such sums as are necessary to carry out the provisions of this section.

Chairman SENSENBRENNER. I ask the members to proceed with the amendments in the order in the roster, and I yield myself 5 minutes for purposes of an opening statement.

Today we will consider H.R. 860, the Surface Transportation Research and Development Act of 1997. The Legislation Technology Subcommittee Chairwoman, Constance Morella, and Science Committee Ranking Member, George Brown, introduced that on February 27th.

H.R. 860 will serve as the Science Committee's vehicle for consideration of the research and development title for the reauthorization of ISTEA. Under the Rules of the House, the Committee on Science has jurisdiction over scientific research and development. In the case of surface transportation research and development, the Committee's jurisdiction has some overlap with that of the Transportation Committee.

Last week, this Committee and the Committee on Transportation and Infrastructure reached an agreement on the process by which we will address the research and development provisions of ISTEA's reauthorization.

Today, we will report the Science Committee's version of the Surface Transportation Research and Development title. That version will be married with the Transportation Commission's research title as part of the Manager's Amendment on the House Floor when the House considers the ISTEA reauthorization, whenever that may be.

On Monday, all of your offices should have received a draft of an Amendment in the Nature of a Substitute that Congressman Brown and I will offer to H.R. 860. Since Monday, we have made some adjustments to the draft, which I will outline when we take up the amendment. However, the main provisions of the substitute have not changed.

The amendment provides \$491 million in contract authority for each of Fiscal Years 1998, 1999 and 2000 to the Department of Transportation to carry out the surface transportation research and development programs and activities designed to improve the safety, efficiency and effectiveness of the surface transportation system.

The total contract authority included in the amendment matches the level requested by the Administration and is consistent with the balanced budget agreement reached by the Congress earlier this year.

The substitute provides funding for three main categories that encompass the Department's surface transportation research and development portfolio.

First, surface transportation research and technology development, including research in the area of pavements, structures, materials, policy, planning, environment, safety, and motor carriers, is funded at \$160 million for each of the Fiscal Years 1998 through 2000.

Second, technology transfer and applied research, including the National Highway Institute, Local Technical Assistance Program,

transportation fellowships, university research, technology partnerships, Applied Research and Technology Development Program is funded at \$96 million for each Fiscal Year from 1998 through 2000.

Third, intelligent transportation systems and infrastructure is funded at \$235 million for each Fiscal Year from 1998 through 2000.

Consistent with the Results Act, the amendment takes important steps to require the Department to develop a "strategic roadmap" for surface transportation research with clear goals and objectives, and the necessary framework for measuring progress.

Under the amendment, the Department is required to coordinate its research and development efforts with other federal and state agencies, institutes of higher education and the private sector to enhance the exchange of information on transportation research and development activities, and to minimize redundancies in costs of research.

The amendment further ensures that the National Research Council and stakeholders in the private sector will play an important role in the Department's strategic planning process.

Further, the amendment reemphasizes the need for external competitive merit review in the awarding of transportation R&D funding. Neither the bill nor the report contain any earmarks whatsoever, and the selection of participants for existing programs, such as the current University Research Institutes and the University Transportation Centers are made through competitive merit-based processes.

Finally, the amendment ensures that basic and long-term research and development will not be neglected by requiring that 15 of the funds available by the Act be expended on basic research or long-term applied research which are expected to have a duration of 10 years or more.

H.R. 860, once amended, will provide a strong statement of support of surface transportation and development.

I would like to commend the bill's sponsor, Congresswoman Morella and Congressman Brown, and Technology Subcommittee Ranking Member Bart Gordon, for their work in helping craft an excellent bill and yield to the gentleman from California for purposes of an opening statement.

Mr. BROWN of California. Mr. Chairman, I will be very brief. Basically, I want to commend you for your leadership and the bipartisan manner in which we have worked to develop this bill. I am sure that your skills will be challenged in the next stage of the matter, negotiating with our colleagues on the Transportation and Infrastructure Committee.

Chairman SENSENBRENNER. The gentleman will yield. I accept that challenge.

Mr. BROWN of California. Good. I ask unanimous consent to insert the rest of my statement on the record and would like to yield whatever time I have remaining to the distinguished gentleman from Tennessee, the Ranking Member.

Chairman SENSENBRENNER. The gentleman from Tennessee is recognized.

Mr. GORDON. Thank you. Mr. Chairman, I want to commend the members of our Committee for their bipartisan efforts to improve

the research program of the Department of Transportation. I am especially pleased that we have taken important steps to enhance the contributions of universities in this process.

It is no secret that our surface transportation system is beset with problems. However, many of these problems can be solved more efficiently and with less cost if we use the expertise of our universities.

We are faced with increasing maintenance cost, the need to increase capacity and reliability in each of our surface transportation modes. We need to better apply our Nation's computing and electronic expertise to the transportation problems.

We need to improve our understanding of the nature of concretes, asphalts and other materials which determine the useful lives of our transportation infrastructure.

We need broad thinking about the social and environmental consequences of possible transportation actions.

Universities are uniquely situated to study these and many other transportation problems and issues. Many of these transportation problems are not such that they do not all need to be solved by graduate schools.

Undergraduate institutions make major contributions both in know-how and in training the present and future transportation workforce.

The bill before us both increases the role of universities and transportation research, and for the first time, highlights the contributions that 4-year colleges can and should make in solving our transportation problems.

As always, it has been a pleasure working with Chairwoman Morella during the Subcommittee hearings on this issue. I also want to thank Chairman Sensenbrenner and Ranking Member Brown for working with me to address my concerns, as well.

I urge my colleagues to support this important legislation.

Chairman SENSENBRENNER. The gentleman's time has expired.

Without objection, further opening statements will be placed in the record at this point. We will now—

Mrs. MORELLA. Mr. Chairman, I would like to make an opening statement.

Chairman SENSENBRENNER. The gentlewoman from Maryland is somewhat stretching the rules that there is one on each side, but I will recognize her for 5 minutes.

Mrs. MORELLA. Thank you. I appreciate that, Mr. Chairman. I knew you would.

I am pleased—I have confidence in your being able to face the challenge and to be able to recognize our Subcommittee. I am pleased that the Committee is marking up H.R. 860, the Surface Transportation Research and Development Act of 1997 which I introduced with Science Committee Ranking Member George Brown on February 27th of this year.

The Subcommittee on Technology held hearings on the bill, has received testimony from a wide cross-section of sciences and state officials dedicated to improving the science of transportation.

All witnesses agreed on the basic premise that funding transportation research saves money over the long run. Research and development in areas such as pavement research and composite mate-

rials reduce the cost of building and rebuilding our country's infrastructure. Transportation system modeling and research funded through the intelligent transportation system reduces congestion, and therefore, the need to build additional infrastructure.

Research funding, however, does more than just save money because through R&D, we can increase highway safety, reduce vehicle emissions, and improve our quality of life. And I am pleased that there is also a title in here on community environmental impact research program and the substitute amendment, which Chairman Sensenbrenner and Congressman Brown will now offer, accomplishes these goals.

The substitute fund surface transportation R&D is at the Administration's requested level of \$491 million a year. This total is \$76 million above the level authorized in H.R. 2400, the Building Efficient Surface Transportation and Equity Act of 1997.

The funding will be used for research and technology development in the area of pavement, structures, materials, policy, planning, environment, safety and motor carriers, technology transfer and applied research, including funding for the National Highway Institute, local technical assistance programs, transportation fellowships, university research, technology partnerships, and the applied research and technology development program, as well as the intelligent transportation systems.

The substitute also contains important planning requirements, including strengthening the connection between the R&D planning requirements and the Department of Transportation's Government Performance and Results Act strategic plan.

I think Congress has a rare opportunity with this legislation to improve our transportation system so it strengthens our economy, improves environmental quality, expands transportation choices, and gets people to work.

So I salute you, Mr. Chairman, Congressman Brown, our Ranking Member Gordon, and all of the members who are part of this team of passing this bill.

Thank you.

Chairman SENSENBRENNER. The gentlewoman's time has expired.

Now, without objection, opening statements will be put in the record at this time and we will go to amendments, and Mr. Brown and I have an Amendment in the Nature of a Substitute, which the Clerk will report.

Ms. SCHWARTZ. Amendment in the nature of a substitute to H.R. 860 offered by Mr. Sensenbrenner and Mr. Brown of California.

[The amendment roster, the text of the amendment, and Chairman Sensenbrenner's statement follow:]

COMMITTEE ON SCIENCE—FULL COMMITTEE MARKUP, SEPTEMBER 17,
1997

AMENDMENT ROSTER

H.R. 860, Surface Transportation Research and Development Act of 1997—Motion to adopt the bill, as amended: Adopted by a voice vote;—Motion to report the bill, as amended: Adopted by a voice vote.

No.	Sponsor	Description	Results
1.	Mr. Sensenbrenner & Mr. Brown	Amendment in the Nature of a Substitute to H.R. 860.	—Adopted by a voice vote.
2.	Ms. Johnson	Amendment to the Amendment in the Nature of a Substitute to H.R. 860 to study effects of transportation system design on low income and minority communities.	—Withdrawn.

**AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 860
OFFERED BY MR. SENSENBRENNER AND MR. BROWN OF CALIFORNIA**

Strike all after the enacting clause and insert in lieu thereof the following:

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

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

(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. Authorizations 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.

SEC. 2. PURPOSES.

The purposes of this Act are—

- (1) to promote an inclusive approach to surface transportation research and development by requiring a multimodal focus, facilitating cooperation among industry, institutions of higher education, and government, and increasing coordination between Federal and State research organizations;
- (2) to promote high standards in research, development, and technology utilization through merit review, competitive awards, enhanced technology transfer, accelerated standards

development, and better understanding of and increased use of life cycle costing of projects;

(3) to strengthen basic and longer term transportation research efforts and strengthen the role of institutions of higher education in those programs;

(4) to strengthen the efforts of the Department of Transportation at strategic and long-range planning, and to streamline data collection, measurement of research results, and utilization of research results by others; and

(5) to enhance the impact of transportation research and development by ensuring the consideration of safety, the efficient movement of people and goods, the environment, and life cycle cost savings of transportation decisions.

SEC. 3. LIMITATIONS.

(a) PROHIBITION OF LOBBYING ACTIVITIES.—No funds appropriated to the Secretary of Transportation shall be available for any activity whose purpose is to influence any pending Federal, State, or local legislation, except that this subsection shall not prevent officers or employees of the United States or of its departments or agencies from communicating to Members of Congress on the request of any Member or to Congress, through the proper channels, requests for legislation or appropriations which they deem necessary for the efficient conduct of the public business. Nothing in this subsection shall prohibit officers or employees of the United States or its departments or agencies from testifying before any Federal, State, or local legislative body upon the invitation of such legislative body.

(b) LIMITATION ON APPROPRIATIONS.—No sums are authorized to be appropriated to the Secretary of Transportation for fiscal years 1998, 1999, and 2000 for the purposes for which sums are authorized by this Act and the amendments made by this Act, unless such sums are specifically authorized to be appropriated by this Act or the amendments made by this Act.

(c) ELIGIBILITY FOR AWARDS.—

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

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

(3) DEFINITION.—For purposes of this subsection, the term “grant agreement” means a legal instrument whose principal purpose is to transfer a thing of value to the recipient to carry out a public purpose of support or stimulation authorized by a law of the United States, and does not include the acquisition

(by purchase, lease, or barter) of property or services for the direct benefit or use of the United States Government. Such term does not include a cooperative agreement (as such term is used in section 6305 of title 31, United States Code) or a cooperative research and development agreement (as such term is defined in section 12(d)(1) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a(d)(1))).

SEC. 4. NOTICE.

(a) NOTICE OF REPROGRAMMING.—If any funds authorized by this Act or the amendments made by this Act are subject to a reprogramming action that requires notice to be provided to the Appropriations Committees of the House of Representatives and the Senate, notice of such action shall concurrently be provided to the Committees on Science and Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(b) NOTICE OF REORGANIZATION.—The Secretary of Transportation shall provide notice to the Committees on Science, Transportation and Infrastructure, and Appropriations of the House of Representatives, and the Committees on Commerce, Science, and Transportation and Appropriations of the Senate, not later than 15 days before any major reorganization of any program, project, or activity of the Department of Transportation for which funds are authorized by this Act or the amendments made by this Act.

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

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

(1) give high priority to correcting all 2-digit date-related problems in its computer systems to ensure that those systems continue to operate effectively in the year 2000 and beyond;

(2) assess immediately the extent of the risk to the operations of the Department of Transportation posed by the problems referred to in paragraph (1), and plan and budget for achieving Year 2000 compliance for all of its mission-critical systems; and

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

TITLE VI—RESEARCH

Subtitle A—Programs and Activities

SEC. 6001. TRANSPORTATION RESEARCH AND TECHNOLOGY DEVELOPMENT.

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

“CHAPTER 61—RESEARCH AND 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.

“SUBCHAPTER I—GENERAL AND ADMINISTRATIVE

“§ 6101. Authority for research and technology development program

“The Secretary of Transportation is authorized to carry out a program of research and technology development activities in support of the Department’s mission. Such activities shall be carried out in accordance with the plan developed under section 6123, and shall include—

- “(1) strategic planning and policy analysis, including State planning and research;
- “(2) research and technology development;
- “(3) collection, analysis, and dissemination of research data and results;
- “(4) systems engineering and systems assessments;
- “(5) technology demonstrations and operational tests; and
- “(6) technology transfer and skills development.

“§ 6102. Transactional authority

“To carry out the activities described in section 6101, the Secretary of Transportation may enter into contracts, grants, and cooperative agreements with any public or private sector entity.

“§ 6103. Definitions

“For purposes of this chapter—

- “(1) the term ‘institution of higher education’ has the meaning given that term in section 1201 of the Higher Education Act of 1965; and
- “(2) the term ‘operating administrations’ means the Administrations that are components of the Department of Transportation, and the Bureau of Transportation Statistics.

“SUBCHAPTER II—PLANNING

“§ 6121. Planning

“The Secretary of Transportation shall—

“(1) establish a strategic planning process, consistent with section 306 of title 5, United States Code, for the Department of Transportation to determine national transportation research and technology development priorities;

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

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

“§ 6122. Implementation

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

“(1) provide for the integrated planning, coordination, and consultation among the operating administrations, all other Federal agencies with responsibility for transportation research and technology development, State and local governments, institutions of higher education, industry, and other private and public sector organizations engaged in transportation-related research and development activities;

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

“(3) develop and implement methods for evaluating the comparative utility, life cycle costs, and environmental and social impacts of various transportation alternatives; and

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

“§ 6123. Surface transportation research and technology development plan

“(a) DEVELOPMENT.—In implementing section 6121, the Secretary of Transportation shall develop an integrated surface transportation research and technology development plan (in this section referred to as the ‘plan’).

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

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

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

“(B) development of a seamless transportation system by integrating transportation modes; and

“(C) enhancement of the role of universities in surface transportation research and technology development and technology transfer;

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

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

“(A) collecting, assessing, and disseminating research and technology development results from other countries that are relevant to surface transportation; and

“(B) analyzing and applying research and technology development from other fields and industries that may have applications for the surface transportation sector;

“(4) a description of the Department’s overall strategy, and the role of each of the operating administrations in carrying out the plan over the next 5 years including a description of procedures for coordination of its efforts with the other operating administrations and with other Federal agencies;

“(5) an assessment of how State and local research and technology development activities are contributing to the achievement of the goals identified under paragraph (1);

“(6) details of the Department’s surface transportation research and technology development programs, including performance goals, resources needed to achieve those goals, and performance indicators as described in section 1115(a) of title 31, United States Code, for the next 5 years for each area of research and technology development;

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

“(8) responses to significant comments obtained from the National Research Council and other advisory bodies, and a description of any corrective actions taken pursuant thereto.

“(c) COOPERATION WITH INDUSTRY.—A primary component of the plan shall be cooperation with industry in carrying out this chapter and strengthening the manufacturing capabilities of United States firms in order to produce products for transportation systems.

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

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

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

“(3) program performance report required under section 1116 of title 31, United States Code,

with respect to surface transportation research and technology development.

“(e) STRATEGIC PLAN.—

“(1) INITIAL TRANSMITTAL.—Within 1 year after the date of the enactment of the Surface Transportation Research and Development Act of 1997, the Secretary shall transmit to the Director of the Office of Management and Budget and to the Congress a strategic plan as described in section 306(a) of title 5, United States Code, which shall include the plan developed under this section.

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

“(f) PERFORMANCE PLANS AND REPORTS.—In complying with sections 1115 and 1116 of title 31, United States Code, the Secretary shall include—

“(1) a summary of the results for the previous fiscal year of surface transportation research and technology development programs to which the Department of Transportation contributes, along with—

“(A) an analysis of the relationship between those results and the goals identified under subsection (b)(1); and

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

“(2) a description of significant surface transportation research and technology development initiatives, if any, undertaken during the previous fiscal year which were not in the plan developed under subsection (a), and any significant changes in the plan from the previous year’s plan; and

“(3) a list of all surface transportation research and technology development grants, contracts, and cooperative agreements entered into by the Department of Transportation that were not competitively awarded on the basis of merit review.

“§ 6124. Merit review and performance measurement

“The Secretary of Transportation shall, within one year after the date of the enactment of the Surface Transportation Research and Development Act of 1997, transmit to the Congress a report describing competitive merit review procedures for research and technology development, and performance measurement procedures for research and technology development and demonstrations, developed in consultation with the National Science Foundation and the National Institute of Standards and Technology.

“§ 6125. Governmental procedures

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

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

“(2) develop model transactions for carrying out and coordinating Federal and State surface transportation research and technology development activities.

“§ 6126. Role of Deputy Secretary

“The implementation of this subchapter shall be coordinated through the Deputy Secretary of Transportation.

“§ 6127. Funding

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

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

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

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

to carry out this subchapter.

“(b) AVAILABILITY OF FUNDS.—Funds authorized for carrying out this subchapter shall be available for obligation in the same man-

ner as if such funds were apportioned under chapter 1 of title 23, United States Code, and such funds shall remain available for obligation for a period of two years after the last day of the fiscal year for which such funds are made available under subsection (a).

“SUBCHAPTER III—UNIVERSITY RESEARCH

“§ 6131. University research in general

“(a) COORDINATION.—The Secretary of Transportation, acting through the Deputy Secretary of Transportation, shall coordinate the efforts of the Department to enhance the role of institutions of higher education in transportation research and technology development and technology transfer.

“(b) ASSISTANCE.—The Secretary may make grants to and enter into contracts and cooperative agreements with institutions of higher education to provide assistance as the Secretary considers necessary to carry out the Department’s research and technology development and technology transfer responsibilities and programs.

“(c) PROGRAM COORDINATION.—The Secretary shall—

“(1) provide for coordination of research and technology development and technology transfer activities that institutions of higher education carry out with funds provided directly or indirectly by the Department of Transportation;

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

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

“§ 6132. National university transportation centers

“(a) REGIONALLY BASED CENTERS.—The Secretary of Transportation shall make grants to institutions of higher education to establish and operate 1 university transportation center in each of the 10 regions that comprise the Standard Federal Regional Boundary System.

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

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

“(1) the research and technology development resources available to the recipient to carry out this section;

“(2) the capability of the recipient to provide leadership in making national and regional contributions to the solution of immediate and long-range transportation problems;

“(3) the recipient’s demonstrated ability to disseminate results of transportation research through a statewide or region-wide technology transfer program; and

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

“(d) OBJECTIVES.—Each university transportation center established and operated under this section shall conduct—

“(1) competitively awarded, peer reviewed transportation research;

“(2) an education program that includes multidisciplinary course work and participation in research; and

“(3) an ongoing program of transportation technology transfer.

“(e) MAINTENANCE OF EFFORT.—As a condition of receiving a grant under subsection (a) or (b), the Secretary shall require the recipient to agree to maintain total expenditures from all sources, other than under this section, for the university transportation center and related research activities at a level at least equal to the average level of expenditures for such activities in the 2 fiscal years prior to award of the grant.

“(f) MATCHING REQUIREMENT.—A grant under subsection (a) or (b) shall not exceed 50 percent of the cost of establishing and operating the university transportation center and related research activities the recipient carries out for the fiscal year or years for which the grant is made.

“§ 6133. Research grants program involving undergraduate students

“(a) ESTABLISHMENT.—The Secretary of Transportation may establish a program for awarding grants to researchers at primarily undergraduate institutions who involve undergraduate students in research on subjects of relevance to transportation. Grants may be awarded under this section for—

“(1) research projects to be carried out at primarily undergraduate institutions; or

“(2) research projects that combine research at primarily undergraduate institutions with other research supported by the Department of Transportation.

“(b) NOTICE OF CRITERIA.—Within 6 months after the date of the enactment of the Surface Transportation Research and Development Act of 1997, the Secretary shall establish and publish in the Federal Register criteria for the submittal of proposals for a grant under this section, and for the awarding of such grants.

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

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

“(2) the scientific and technical merit of the proposed research; and

“(3) the potential for participation by undergraduate students in the proposed research.

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

“§ 6134. Authorization of appropriations

“There are authorized to be appropriated to the Secretary of Transportation—

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

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

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

for carrying out sections 6132 and 6133.

“SUBCHAPTER IV—COMMUNITY AND ENVIRONMENTAL
IMPACT RESEARCH

“§ 6141. Community and Environmental Impact Research Program

“(a) ESTABLISHMENT.—The Secretary of Transportation shall establish a Community and Environmental Impact Research Program to assess the relationships between transportation modes, programs, and projects and their environmental and community impacts. As appropriate, in carrying out the program, the Secretary shall consult with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Housing and Urban Development, the Secretary of Health and Human Services, and the heads of other appropriate Federal departments and agencies and shall maximize the involvement of State and local governments and metropolitan planning organizations, United States colleges and universities, nonprofit organizations and research institutes, and the private sector.

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

“(1) develop transportation alternatives which improve mobility and access, and reduce negative impacts on communities and the environment of transportation systems;

“(2) reduce emissions;

“(3) develop more accurate models for evaluating alternative transportation control measures and alternative transportation system designs, including pedestrian and bicycle-related measures and system designs which may reduce emissions, and are appropriate for use by metropolitan planning organizations and State and local governments in designing implementation plans to meet air quality standards under the Clean Air Act;

“(4) improve understanding of the factors that contribute to the demand for transportation, including transportation system design, demographic change, and land use planning;

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

“(6) develop more comprehensive information regarding the role of trails designed for pedestrians, bicycles, and other non-motorized transportation in facilitating accessibility, and mobility within communities; and

“(7) examine the effects on transportation demand of the use of communications and other information technologies.

“(c) GRANTS, COOPERATIVE AGREEMENTS, AND CONTRACTS.—The Secretary may make grants and enter into cooperative agreements and contracts to carry out this section. Awards shall be made on the basis of a competitive, merit-based process.

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

“(e) FUNDING.—There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account), \$6,000,000 for each of fiscal years 1998, 1999, and 2000 to carry out this section.

“§ 6142. Transportation-Environment Cooperative Research Program

“(a) INDEPENDENT GOVERNING BOARD.—

“(1) ESTABLISHMENT.—The Secretary of Transportation, after consultation with the Secretary of Energy, the Administrator of the Environmental Protection Agency, the Secretary of the Interior, the Secretary of Housing and Urban Development, and the Secretary of Health and Human Services, shall establish and maintain an independent governing board to recommend environmental and energy conservation, technology, and technology transfer research projects related to transportation.

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

“(A) at least 15 persons who are not Federal employees who collectively comprise an appropriate balance of representatives of State transportation and environmental agencies, environmental scientists and engineers, representatives of environmental organizations, and representatives of metropolitan planning organizations and transit operating agencies; and

“(B) 1 representative each from—

“(i) the Department of Transportation;

“(ii) the Department of Energy;

“(iii) the Environmental Protection Agency;

“(iv) the Department of the Interior; and

“(v) the Department of Health and Human Services.

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

“(3) TRAVEL EXPENSES.—Each member of the board shall receive travel expenses, including per diem in lieu of subsistence, in accordance with sections 5702 and 5703 of title 5, United States Code.

“(4) NONAPPLICABILITY.—Section 14 of the Federal Advisory Committee Act shall not apply to the board.

“(b) NATIONAL ACADEMY OF SCIENCES.—The Secretary of Transportation shall enter into an agreement with the National Academy of Sciences under which the National Academy of Sciences will award grants, through a competitive, merit-based, peer-reviewed process, for carrying out research recommended by the independent governing board established under subsection (a).

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

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

“61. RESEARCH AND TECHNOLOGY DEVELOPMENT 6101.”.

SEC. 6002. SURFACE TRANSPORTATION RESEARCH AND TECHNOLOGY DEVELOPMENT PROGRAM.

Section 307 of title 23, United States Code, is amended—

(1) in subsection (a)—

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

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

“(C) TECHNOLOGICAL INNOVATION.—The programs and activities carried out under this section shall be consistent with the plan developed under section 6123 of title 49.

“(D) FUNDS.—Of the amounts authorized to be appropriated under section 6009(a) of the Surface Transportation Research and Development Act of 1997, not more than—

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

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

“(iii) \$116,000,000 for fiscal year 2000,

and such funds as may be deposited by any cooperating organization or person in a special account of the Treasury of the United States established for such purposes, shall be available for carrying out this subsection and subsection (b), and such funds shall remain available for obligation for a period of three years after the last day of the fiscal year for which the funds are made available.”;

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

(D) by striking paragraph (3); and

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

(2) by amending subsection (b) to read as follows:

“(b) MANDATORY CONTENTS OF PROGRAM.—The surface transportation research and technology development programs of the Department of Transportation shall be consistent with the plan developed under section 6123 of title 49, and shall include—

“(1) a coordinated long-term program of research for the development, use, and dissemination of performance indicators to measure the performance of the surface transportation system of the United States, including indicators for productivity, efficiency, energy use, air quality, congestion, safety, maintenance, and other factors which reflect the overall performance of such system; and

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

“(A) methods, materials, and testing to improve the durability of surface transportation infrastructure facilities and extend the life of bridge structures, including new and

innovative technologies to reduce corrosion and tests simulating seismic activity, vibration, and weather;

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

“(C) research on the use of recycled materials such as paper and plastic fiber reinforcement systems;

“(D) research and development on the implementation of new and innovative fuel technologies, including biodiesel fuel, that enable recycled and renewable resources to be used as transportation fuels;

“(E) a surface transportation research program to develop evaluation equipment for infrastructure facilities, including facilities that utilize advanced materials;

“(F) information technology including—

“(i) appropriate computer programs to collect and analyze data on the status of the existing infrastructure facilities for enhancing management, growth, and capacity; and

“(ii) models of surface transportation systems for—

“(I) predicting capacity, safety, and infrastructure durability problems;

“(II) evaluating planned research projects; and

“(III) testing the strengths and weaknesses of proposed revisions in surface transportation operations programs;

“(G) new innovative technologies to enhance and facilitate field construction and rehabilitation techniques for minimizing disruption during repair and maintenance of structures; and

“(H) an increased understanding of the extent to which traditional contracting and specification practices impede innovation, and of the role of alternative practices and incentives to overcoming barriers to the utilization of advanced technologies and research results.”;

(3) by amending subsection (d) to read as follows:

“(d) STUDY OF FUTURE STRATEGIC HIGHWAY RESEARCH PROGRAM.—

“(1) STUDY.—

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

“(B) CONSULTATION.—In conducting the study, the Board shall consult with the American Association of State Highway and Transportation Officials and such other entities

as the Board determines to be necessary to the conduct of the study.

“(2) REPORT.—Not later than 2 years after making a grant or entering into a cooperative agreement or contract under subsection (a), the Board shall submit a final report on the results of the study to the Secretary, the Committee on Environment and Public Works of the Senate, and the Committee on Science and the Committee on Transportation and Infrastructure of the House of Representatives.”;

(4) by striking subsection (e);

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

(6) in subsection (e), as so redesignated by paragraph (5) of this section—

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

“(1) ESTABLISHMENT.—The Secretary shall establish a program to study the vulnerability of the Federal-aid highway system and other surface transportation systems to seismic activity and to develop and implement cost-effective methods to reduce such vulnerability.”;

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

(C) by redesignating paragraph (3) as paragraph (2); and

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

“(3) AUTHORIZATION OF APPROPRIATIONS.—Of the amounts authorized to be appropriated under section 6009(a) of the Surface Transportation Research and Development Act of 1997, not more than—

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

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

“(C) \$2,000,000 for fiscal year 2000,

shall be available for carrying out this subsection.”;

(7) in subsection (f), as so redesignated by paragraph (5) of this section, by inserting “DEFINITION.—” before “As used in”; and

(8) in subsection (g), as so redesignated by paragraph (5) of this section—

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

(B) by inserting “and the Committee on Science” after “Transportation and Infrastructure”; and

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

SEC. 6003. STATISTICS RESEARCH.

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

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

“(1) the investigation of subjects listed in subsection (c)(1), and for research and development of new methods of data collection, management, integration, dissemination, interpretation, and analysis;

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

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

There are authorized to be appropriated to the Secretary \$500,000 for each of the fiscal years 1998, 1999, and 2000 for carrying out this subsection.”.

SEC. 6004. APPLIED RESEARCH AND TECHNOLOGY UTILIZATION PROGRAM.

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

“§ 326. Applied research and technology utilization program

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

“(b) FUNDING.—Funds authorized for carrying out this section shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, except that the Federal share of the cost of any activity under this section shall not exceed 50 percent, and such funds shall remain available for obligation for a period of 3 years after the last day of the fiscal year for which the funds are appropriated.”.

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

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

SEC. 6005. TECHNOLOGY TRANSFER AND TECHNOLOGY PARTNERSHIPS.

(a) TECHNOLOGY TRANSFER AND TECHNOLOGY PARTNERSHIPS.—Chapter 3 of title 23, United States Code, is further amended by adding at the end the following new section:

“§ 327. Technology transfer and technology partnerships

“(a) LOCAL TECHNICAL ASSISTANCE PROGRAM.—

“(1) AUTHORITY.—The Secretary shall carry out a transportation technology transfer program, which is consistent with the plan developed under section 6123 of title 49, to provide access to modern highway technology to public authorities and the private sector.

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

“(A) make research results and technology available to assist public authorities and the private sector to—

“(i) develop and expand their expertise in highway technology (including pavement, concrete, bridge, and safety management systems) and in contracting practices which favor the use, when cost effective on a life

cycle basis, of advanced products and technologies of innovative designs and construction techniques;

“(ii) improve highway and safety technology;

“(iii) enhance programs for the movement of passengers and freight;

“(iv) promote intergovernmental transportation planning, life cycle costing, and project selection in a manner that incorporates state-of-the-art knowledge related to land use planning, environmental protection, and preventive maintenance;

“(v) expand knowledge of implementing life cycle cost assessment, including establishing the appropriate analysis period and discount rates, learning how to value and properly consider user costs, determining tradeoffs between reconstruction and rehabilitation, and establishing methodologies for balancing higher initial costs of new technologies and improved or advanced materials against lower maintenance costs;

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

“(vii) deal effectively with road-related problems by preparing and providing training packages, manuals, guidelines, and technical resource materials;

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

“(C) operate, in cooperation with public authorities and institutions of higher education, technology transfer centers.

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

“(4) FUNDING.—Funds authorized for carrying out this subsection shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, and such funds shall remain available for obligation for a period of 3 years after the last day of the fiscal year for which the funds are appropriated.

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

“(1) GENERAL AUTHORITY.—The Secretary may, acting either independently or in cooperation with other Federal departments, agencies, and instrumentalities, make grants for fellowships for any purpose for which research, technology development, or technology transfer is authorized by this section.

“(2) IMPLEMENTATION.—The Secretary shall implement a transportation fellowship program for the purpose of attracting qualified students to the field of transportation research. Such program shall be known as the ‘Dwight David Eisenhower Transportation Fellowship Program’. The program shall offer fellowships to students at institutions of higher education. The recipients of the fellowships must be United States citizens.

“(3) FUNDING.—Funds authorized for carrying out this subsection shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of this title, and such funds shall remain available for obligation for a period of one year after the last day of the fiscal year for which such funds are appropriated.

“(c) TECHNOLOGY PARTNERSHIPS.—

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

“(A) technology transfer and the further development and validation of the results of applied research programs such as the Strategic Highway Research Program, including the Superpave system, to establish a complete program that is well validated and implements performance prediction algorithms;

“(B) providing Federal leadership and support in areas like initiation of regional technology excellence centers, user-producer groups, Long-Term Pavement Performance product implementation, and technology access and exchange programs; and

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

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

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

(1) in subsection (a)(2), by striking “training programs of instruction for Federal Highway Administration” and inserting in lieu thereof “education and training programs focusing on new and rapidly changing surface transportation technologies for Federal”;

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

(3) in subsection (b), by striking “highway department” both places it appears and inserting in lieu thereof “transportation agency”;

(4) in subsection (c), by striking “highway employees” and inserting in lieu thereof “transportation employees”;

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

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

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

“327. Technology transfer and technology partnerships.”

(2) Section 101(a) of title 23, United States Code, is amended by inserting after the undesignated paragraph relating to “Indian reservation roads” the following new paragraph:

“The term ‘institution of higher education’ has the meaning given that term in section 1201 of the Higher Education Act of 1965.”

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

SEC. 6006. LONG-TERM PAVEMENT PERFORMANCE AND ADVANCED RESEARCH.

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

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

“(a) LONG-TERM PAVEMENT PERFORMANCE.—

“(1) CONTINUATION OF PROGRAM.—The Secretary of Transportation may make grants and enter into contracts and cooperative agreements for the continuation of activities under the Long-Term Pavement Performance research program begun under the Strategic Highway Research Program.

“(2) FUNDING.—Funds authorized for carrying out this subsection shall remain available for obligation for a period of three years after the last day of the fiscal year for which such funds are appropriated.

“(b) ADVANCED RESEARCH.—

“(1) AUTHORITY.—The Secretary shall establish an advanced research program, which is consistent with the plan developed under section 6123 of title 49, to address longer-term, higher-risk research that shows potential benefits for improving the durability, longevity, mobility, efficiency, environmental impact, productivity, and safety of surface transportation systems. In carrying out such program, the Secretary shall seek to develop partnerships with the public and private sectors.

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

“(A) characterization of the composition and performance characteristics of basic construction materials used in the infrastructure;

“(B) diagnostics for evaluation of the condition of surface transportation structures to enable the assessment of risks of failure from seismic activity, vibration, and weather;

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

“(D) safety research and technology development;

- “(E) environmental research;
- “(F) data acquisition and analysis techniques for system condition and performance monitoring; and
- “(G) human factors research.

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

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

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

SEC. 6007. STATE RESEARCH.

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

(1) by inserting “and the evaluation and utilization of advanced materials, innovative construction techniques, and advanced technology” after “135 of this title” in paragraph (1)(B);

(2) by amending paragraph (2) to read as follows:

“(2) MINIMUM EXPENDITURES ON RESEARCH, DEVELOPMENT, AND TECHNOLOGY TRANSFER ACTIVITIES.—Not less than 25 percent of the funds that are apportioned to a State for a fiscal year and are subject to subsection (a) shall be expended by the State transportation agency for research, development, and technology transfer activities described in subsection (a) relating to surface transportation systems, in a manner that is consistent with the plan developed under section 6123 of title 49.”; and

(3) by adding at the end the following new paragraph:

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

SEC. 6008. MINIMUM EXPENDITURES ON LONG-TERM RESEARCH PROJECTS.

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

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

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

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

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

SEC. 6009. AUTHORIZATION OF APPROPRIATIONS.

(a) SURFACE TRANSPORTATION RESEARCH AND TECHNOLOGY DEVELOPMENT PROGRAM.—There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account)—

- (1) \$118,000,000 for fiscal year 1998;
- (2) \$118,000,000 for fiscal year 1999; and
- (3) \$118,000,000 for fiscal year 2000,

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

(b) APPLIED RESEARCH AND TECHNOLOGY PROGRAM.—There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account)—

- (1) \$45,000,000 for fiscal year 1998;
- (2) \$45,000,000 for fiscal year 1999; and
- (3) \$45,000,000 for fiscal year 2000,

to carry out section 326 of title 23, United States Code. Where appropriate to achieve the goals established under subsection (a) of that section, the Secretary may allocate such funds to States.

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

- (1) \$10,000,000 for fiscal year 1998;
- (2) \$10,000,000 for fiscal year 1999; and
- (3) \$10,000,000 for fiscal year 2000,

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

(d) NATIONAL HIGHWAY INSTITUTE.—There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account)—

- (1) \$8,000,000 for fiscal year 1998;
- (2) \$8,000,000 for fiscal year 1999; and
- (3) \$8,000,000 for fiscal year 2000,

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

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

- (1) \$2,000,000 for fiscal year 1998;
- (2) \$2,000,000 for fiscal year 1999; and
- (3) \$2,000,000 for fiscal year 2000,

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

(f) TECHNOLOGY PARTNERSHIPS.—There are authorized to be appropriated, out of the Highway Trust Fund (other than the Mass Transit Account)—

- (1) \$10,000,000 for fiscal year 1998;
- (2) \$10,000,000 for fiscal year 1999; and
- (3) \$10,000,000 for fiscal year 2000,

to carry out section 327(c) of title 23, United States Code.

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

- (1) \$15,000,000 for fiscal year 1998;
- (2) \$15,000,000 for fiscal year 1999; and
- (3) \$15,000,000 for fiscal year 2000,

to carry out section 328(a) of title 23, United States Code.

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

- (1) \$12,000,000 for fiscal year 1998;
- (2) \$12,000,000 for fiscal year 1999; and
- (3) \$12,000,000 for fiscal year 2000,

to carry out section 328(b) of title 23, United States Code.

Subtitle B—Intelligent Transportation Systems

SEC. 6021. SHORT TITLE AMENDMENT.

Section 6051 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended by striking “Vehicle-Highway Systems Act of 1991” and inserting in lieu thereof “Transportation Systems Act of 1997”.

SEC. 6022. ESTABLISHMENT AND SCOPE OF PROGRAM.

Section 6052 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended to read as follows:

“SEC. 6052. ESTABLISHMENT AND SCOPE OF PROGRAM.

“(a) ESTABLISHMENT.—Subject to the provisions of this part, and consistent with the plan developed under section 6123 of title 49, United States Code, the Secretary shall conduct a program to research, develop, and operationally test intelligent transportation systems and promote implementation of integrated and interoperable intelligent transportation systems as a component of the Nation’s surface transportation systems.

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

“(1) the protection and enhancement of the environment affected by surface transportation;

“(2) the enhancement of safe and efficient operation of the Nation’s highway systems with a particular emphasis on aspects of systems that will increase safety and identification of aspects of the system that may degrade safety;

“(3) the reduction of traffic congestion;

“(4) the development, in advance of Federally supported deployment efforts, of the standards and protocols required to ensure the interoperability of intelligent transportation systems;

“(5) the collection and analysis of data to enable purchasers of such systems to understand how best to apply intelligent transportation systems to their local situations, to understand life cycle costs, and to determine the benefits of their systems in rural and urban settings;

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

“(7) the development of new generations of intelligent transportation systems which are cost-efficient and easier to operate; and

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

SEC. 6023. GENERAL AUTHORITIES AND REQUIREMENTS.

Section 6053 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended—

(1) in subsection (a), by striking “colleges and universities, and State” and inserting in lieu thereof “institutions of higher education and State, regional.”;

(2) by amending subsection (b) to read as follows:

“(b) **STANDARDS.**—Consistent with section 12(d) of the National Technology Transfer and Advancement Act of 1995, the Secretary shall expedite the development, implementation, and maintenance of a National Architecture and of the required voluntary consensus standards and protocols to promote and support the widespread use and evaluation of interoperable intelligent transportation systems technology as a component of the Nation’s surface transportation systems. Not later than 6 months after the date of the enactment of the Surface Transportation Research and Development Act of 1997, the Secretary shall develop a prioritized list of intelligent transportation systems standards. The Secretary shall annually update such list. To the extent practicable, such standards and protocols shall promote interoperability among intelligent transportation systems technologies implemented or likely to be implemented in the future throughout the States. The Secretary may enter into agreements with private sector standards development organizations, with national laboratories, and with the National Institute of Standards and Technology in carrying out this subsection.”;

(3) in subsection (c)—

(A) by inserting “independent” after “requirements 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 previous fiscal year, including standards development.”; and

(3) by striking subsection (d).

SEC. 6025. TECHNICAL, PLANNING, AND OPERATIONAL TESTING PROJECT ASSISTANCE.

Section 6055 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended—

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

(2) in subsection (c), by striking “for a designated corridor” and inserting in lieu thereof “under a project selected under section 6056”; and

(3) in subsection (d)—

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

(B) by striking “and” at the end of paragraph (1)(A);

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

“(C) validate and accelerate the establishment and widespread conformance with the National Architecture and related standards and protocols, including demonstrations and tests related to integrating and increasing the interoperability of currently installed intelligent transportation systems;

“(D) demonstrate innovative contracting or financing strategies, or address legal, technological, or institutional barriers to the widespread utilization of intelligent transportation systems technology;

“(E) validate the effectiveness of integrated intelligent transportation systems and infrastructure, including multimodal applications, in enhancing the safety and efficiency of surface transportation;

“(F) demonstrate advanced traffic management technologies, including the use of fiber optic cables and video, to monitor and control traffic flow and volume; and

“(G) contribute to the development of a workforce capable of operating and maintaining intelligent transportation systems and infrastructure;”;

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

“(3) require that operational tests utilizing Federal funds under this part—

“(A) are designed for the collection of data to permit objective evaluation of the success of the tests and the derivation of cost-benefit information that is useful to others contemplating the purchase of similar systems; and

“(B) have a written evaluation of the intelligent transportation systems technologies investigated and of the results of the investigation which—

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

“(ii) includes detailed information on the benefits and costs of the intelligent transportation systems being tested to aid similarly situated localities who are contemplating intelligent transportation systems purchases.”.

SEC. 6026. APPLICATIONS OF TECHNOLOGY.

Section 6056 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended to read as follows:

“SEC. 6056. APPLICATIONS OF TECHNOLOGY.

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

“(1) validating and accelerating the establishment of national intelligent transportation systems standards and protocols; and
 “(2) technical assistance and training in advanced technologies by institutions of higher education and others.

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

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

“(2) when applicable, be part of approved plans and programs developed under Statewide and metropolitan transportation planning processes;

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

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

“(c) STANDARDIZATION OF INTELLIGENT TRANSPORTATION SYSTEMS.—(1) Funds authorized for carrying out this section may be obligated to deploy intelligent transportation systems technologies only in accordance with provisional or final voluntary consensus standards and protocols necessary to ensure interoperability. In the absence of required standards and protocols, available funds obligated under this section shall be used exclusively for the research and technology development and operational tests of intelligent transportation systems.

“(2) For purposes of this subsection, the term ‘provisional’ means approved by the appropriate subunit of a private sector standards development organization and, in the judgment of the Secretary, not likely to chance significantly in its final form.

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

“(1) research on new, unproven intelligent transportation systems which are at least 5 years from utilization, and are designed to reduce congestion, enhance safety, and improve cost effectiveness;

“(2) human factors research, including research in the science of the driving process, to improve the operational efficiency and safety of intelligent transportation systems;

“(3) research on environmental, weather, and natural conditions that impact intelligent transportation systems, including the effects of cold climates;

“(4) research to increase intelligent transportation systems and infrastructure durability; and

“(5) materials or magnetism research.”

SEC. 6027. FUNDING.

Section 6058 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended—

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

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

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

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

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

(6) in subsection (b), as so redesignated by paragraph (5) of this section, by striking “80 percent” and all that follows through “funding of such activities” and inserting in lieu thereof “50 percent of the cost of such activities”.

SEC. 6028. DEFINITIONS.

Section 6059 of the Intermodal Surface Transportation Efficiency Act of 1991 is amended to read as follows:

“SEC. 6059. DEFINITIONS.

“For the purposes of this part—

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

“(2) the term ‘intelligent transportation systems’ means the development or application of electronics, communications, or information processing (including advanced traffic management systems, commercial vehicle operations, advanced traveler information systems, commercial and advanced vehicle control systems, advanced public transportation systems, satellite vehicle tracking systems, and advanced vehicle communications systems) used singly or in combination to improve the efficiency and safety of surface transportation systems;

“(3) the term ‘National Architecture’ means the common framework adopted by the Secretary, including technical guidelines, details, and standards, to ensure the coordinated development of interoperable intelligent transportation systems; and

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

STATEMENT ON CHANGES TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OF H.R. 860 CHAIRMAN F. JAMES SENSENBRENNER, JR.

Since distributing the Sensenbrenner/Brown Substitute Amendment to H.R. 860 earlier this week, certain changes have been made to the legislation.

First, the Community and Environmental Research Programs contained in Sections 6141 and 6142 have been added to address deficiencies in the Department of Transportation’s current surface transportation research and development program identified by the General Accounting Office and the National Academy of Sciences. The Substitute Amendment provides \$10 million in each fiscal years 1998, 1999 and 2000, to carry out the research programs which are designed to provide State and local transportation officials with the tools and knowledge necessary to better understand the environmental and community impacts of transportation decisions. These funds have been taken from existing surface transpor-

tation research accounts within the legislation and do not increase the total authorization levels.

Second, a new provision has been added to commission a study to be conducted by the National Academy of Sciences regarding the need for a new Strategic Highway Research Program or similar effort. The original "SHARP" program has yielded over 100 pavement products that combine to save our nation over \$690 million per year in highway operations and maintenance costs. The study required by this legislation will assist Congress in determining whether it is cost-effective to invest in a new SHARP program in the near future, or whether limited funds are better spent implementing current products nationwide.

Finally, provisions have been added to the Substitute Amendment requiring the Department to conduct research on the use of recycled and renewable materials to be used as transportation fuels; to restrict Department of Transportation funds from being used to "lobby" or influence pending legislation; to express a "Sense of Congress" that the Department should give a high priority to correcting the Year 2000 problem in the Department's computer systems; and to require Committee notification if funds made by this legislation are reprogrammed for other purposes.

Chairman SENSENBRENNER. Without objection, the amendment is considered as read and open for amendment at any point.

I yield myself 15 seconds basically to say that I described the provisions of the Amendment in the Nature of a Substitute in my opening statement. This has been worked out by both sides of the aisle, and I would commend it to everyone's favorable vote, and yield back the balance of my time.

The gentleman from California.

Mr. BROWN of California. Mr. Chairman, in my 15 seconds, I will merely indicate my agreement with your statement and ask the members on our side to support the proposed amendment.

Chairman SENSENBRENNER. The gentlewoman from Michigan, Ms. Rivers.

Ms. RIVERS. Thank you, Mr. Chair. I have a couple of questions about the new language, particularly about the provisions, the anti-lobbying provisions. And I am specifically concerned about communications between the Department of Transportation here and state Departments of Transportation. And I need to understand the impact.

If the U.S. Department of Transportation wanted to communicate to state departments on bills like seatbelt use or aggressive and drunk drivers, bicycle safety, child seats.

Right now, there is a lot of controversy around the use of child seats and with air bags.

Would all of that be closed off by this language?

Chairman SENSENBRENNER. Let me say that the intent of the Chair was to prevent the use of funds for agencies to say, "Write your state legislature," or, "Write your representative in Congress," you know, which is the utilizing of public funds, you know, to actually pay for advocacy constituent pressure on elected officials, which I do not think is the proper use of public funds.

But I would like to ask staff to answer this specific question to clarify the relationship between the U.S. DOT and the 50 state DOT's on the issue that the gentlewoman from Michigan raised.

Ms. RIVERS. And, frankly, on the Executive Branch, generally, so not just the DOT, but the Executive Branch of each of the 50 States.

Mr. RUSSELL. The section we are discussing is Section 3, Limitations A. There is a prohibit on page 3, Prohibition of Lobbying Activities.

Under the prohibition, it specifically states that nothing in the subsection should prohibit officers or employees of the United States or its departments or agencies from testifying before any federal, state or legislative body upon the invitation of such legislative body.

Ms. RIVERS. So only if—so the information can be shared only if the State requests it?

The U.S. DOT may not make a determination to send out a bulletin, for example, saying, “These things are happening. You should be aware. You might want to change your law relative to that?”

Mr. RUSSELL. If it would be construed as lobbying under the provision—under this provision, as written, they would not be allowed to do that. They can do anything that is not construed as lobbying.

Ms. RIVERS. That is what I am asking, Mr. Chairman, frankly, is how lobbying is going to be construed under this new language. What will constitute lobbying?

Chairman SENSENBRENNER. If the gentlewoman from Michigan will yield.

Providing information is not lobbying, but advocacy is lobbying. And the intent of this section is to prohibit the taxpayer's dollars from being used for advocacy purposes, but not to prevent the taxpayer's dollars from being used for purposes of providing information.

Ms. RIVERS. So, for example, a public education campaign would be acceptable, as long as there was not a directive to call your state legislature or put pressure state legislature?

Chairman SENSENBRENNER. Well, I would guess that it depends upon how the—how the public education campaign is worded.

If—and I would like to yield to Mr. Russell.

Mr. RUSSELL. To try to further clarify that point, under the provision, it specifically states that lobbying is defined as activities whose purpose is to influence pending federal, state or local legislation. So it has to be intended to specifically influence pending legislation, otherwise, it would not be lobbying.

So what you just described would not be covered, unless it was specifically intended to influence pending legislation.

Ms. RIVERS. Let me give you a hypothetical. A State is considering drunk driving legislation. The Department of Transportation sends, unrequested, to that State statistics having to do with drunk driving and serious accidents.

Would that be—and the conclusion is clear from the statistics that a particular course of action would be wiser than the other.

Would that be lobbying under this language?

Mr. RUSSELL. No. I do not think so. It is giving facts, but if it says that the Michigan legislature ought to reduce the presumption

of intoxication to .08, it is the conclusion of those facts, that would be lobbying.

Ms. RIVERS. Okay. Thank you very much, Mr. Chairman.

Chairman SENSENBRENNER. The gentlewoman's time has expired.

The other gentlewoman from Michigan.

Ms. STABENOW. Thank you, Mr. Chairman.

First, I would speak in favor of the amendment to substitute and commend our Subcommittee Chairwoman and Ranking Member and all those who have been involved in putting together what I think is a very excellent research bill.

And as a part of this, I wanted to share with you some important research that is going on at Michigan State University that specifically speaks to one of the sections in the bill and I believe is an important example of hopefully what we will be able to accomplish by passage of this bill and the subsequent funding.

You have in front of you, many of you, a piece of what could be characterized—it looks like—I guess you can guess what it looks like in terms of the piece of square, but it is a piece of concrete.

We know that concrete, right now, is widely used in construction, about three tons per person each year. And there are many good reasons to use concrete, but a number of flaws, both environmentally, as it relates to freezing and thawing, and also issues of brittleness.

Michigan State, for the last decade, has been doing research that involves recycled materials. This particular piece that I have shared with a number of you, and I will pass it down, includes two percent plastic and two percent recycled paper, paper fibers.

And they have found in their research that it creates a more flexible form of concrete, less costly, more durable, and has great implications for us as we look at our highways across the country.

Chairman SENSENBRENNER. Will the gentlewoman yield?

Ms. STABENOW. Yes. I would be happy to.

Chairman SENSENBRENNER. Is this appropriately described as Michigan garbage concrete?

Ms. STABENOW. We would be happy to tag this as the successful Michigan garbage concrete of the 21st Century if we are able to proceed and get the word out, and hopefully, funding in order to be able to take the next steps in demonstrating its effectiveness.

We have a specific project that has been in the initial laboratory research and now is ready for the next stages, and I am very hopeful that this is the kind of research that we will see. It is very exciting, and this is the kind of thing that we will see funded under the Surface Transportation Research and Technology Development Program.

Thank you, Mr. Chairman.

Chairman SENSENBRENNER. I thank the gentlewoman from Michigan.

The gentleman from Minnesota is recognize for 5 minutes.

Mr. GUTKNECHT. Thank you, Mr. Chairman. I want to especially thank you and your staff for working with me to include in this legislation a provision calling for the Department of Transportation to conduct research and develop new and innovative fuel technologies,

including bio-diesel. This enables recycled and renewable energy resources to be used as transportation fuels.

I am confident this provision will result in useful research on bio-diesel fuel to demonstrate its environmental benefits, like reducing exhaust, particulate matter, sulfur and carbon monoxide.

It makes sense to develop these new fuels that are easy to produce and extremely good for the environment.

During the energy crisis—and members, you might be interested in this—in the 1970's, America imported less than 40 percent of its fuel. Today, we are importing nearly two-thirds of our energy needs.

It is time we start to look for new and innovative ways to reduce our dependence on foreign energy sources. I believe bio-diesel fuel can help us do exactly that.

This bio-diesel provision is a win-win-win proposition. We win with cleaner air. We win with energy independence, and we win by providing markets for soybean producers and a stronger economy for rural America.

Again, I want to thank you, Mr. Chairman, and all of the staff for helping to make this possible and for the work that you have put in to producing this legislation.

Chairman SENSENBRENNER. The gentleman's time has expired.

The gentleman from Washington is recognized for 5 minutes.

Mr. NETHERCUTT. Mr. Chairman, I will not take 5 minutes. I just want to inquire of the Chair as to Section 5, page 6 of the substitute relative to the changeover in the computers for the Year 2000.

I noticed in Subparagraph 2, it talks about having the Department of Transportation assess immediately the extent of the risk of the operation of DOT and so forth with regard to the change.

What does the Chair and what does the Committee contemplate with regard to, and what is immediate and what reporting mechanism there will be?

Chairman SENSENBRENNER. Well, immediate means as soon as possible because the clock is ticking, and the closer we get to December 31, 1999, without any action being taken to deal with this problem, the more expensive it is going to be to correct it.

The reporting mechanism, I believe, is back here, is it not, Richard?

Mr. RUSSELL. Yes.

Mrs. MORELLA. Mr. Chairman, I want to make a comment, also.

Chairman SENSENBRENNER. Yes.

Mr. RUSSELL. This language is actually identical to language that we included on all our authorization bills that we passed earlier in the year. The reporting mechanism, actually one now currently exists through O&B. We receive quarterly reports now on the state of Year 2000 compliance.

DOT is one of the laggard agencies.

Mrs. MORELLA. Mr. Chairman?

Chairman SENSENBRENNER. The time is controlled by the gentleman from Washington.

Mr. NETHERCUTT. I would yield back, Mr. Chairman. Thank you.

Chairman SENSENBRENNER. The gentlewoman from Maryland.

Mrs. MORELLA. The gentleman from Washington yields to me?

Mr. NETHERCUTT. Certainly.

Mrs. MORELLA. Thank you.

The most recent quarterly report was just submitted and the Department of Transportation, as Mr. Russell mentioned, was given by myself and Steven Horn an F grade, which means that they have a validation and an implementation date that are identical, which is an impossibility. And so it is very important that they move to the task.

As a matter of fact, the President had said that no money from their Department can be used for information technology until the computer compliance is taken care of. So we need to continue to monitor very closely.

We have been pushing to get the President to take the leadership role because we feel Congress is moving in the right direction.

Thank you. Thank you for yielding. Thank you, Mr. Chairman.

Chairman SENSENBRENNER. The gentleman's time has expired.

The question is on the adoption of the Amendment in the Nature of the Substitute vouchered by Mr. Brown and myself.

All those in favor will signify by saying, "Aye."

Opposed, no.

The ayes have it and the Amendment in the Nature of a Substitute is adopted.

Are there further amendments?

The gentlewoman from Texas, Ms. Johnson.

Ms. JOHNSON. Thank you very much, Mr. Chairman. I have an amendment at the desk.

Chairman SENSENBRENNER. The Clerk will report the amendment.

Ms. SCHWARTZ. Amendment offered by Ms. Eddie Bernice Johnson of Texas to the amendment in the nature of a substitute, page 24, line 2. Strike, "and."

Page 24, line 5, strike the period and insert, "in lieu thereof(;)"

Page 24, after line 5, insert the following new—

[The text of the amendment follows:]

AMENDMENT OFFERED BY MS. EDDIE BERNICE JOHNSON OF TEXAS
TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE

Page 24, line 2, strike "and".

Page 24, line 5, strike the period and insert in lieu thereof "; and".

Page 24, after line 5, insert the following new paragraph:

"(8) study the relationship between transportation system design and its effects, including environmental justice issues, on low-income communities and minority communities.

Chairman SENSENBRENNER. Without objection, the amendment is considered as read and the gentlewoman is recognized for 5 minutes.

Ms. JOHNSON. Thank you very much, Mr. Chairman. I ask my colleagues to consider research opportunity to study the relationship between transportation system design and environmental justice issues.

Environmental justice issues not addressed creates an unfortunate situation of environmental racism. I feel that environmental racism is an issue that affects all of us, whether it be the waste

of a paper manufacturing polluting our stream in a rural environment, the toxic fumes of a manufacturer in the urban city, or the construction of roads through the inner city community, and I am concerned about our communities.

I am especially concerned about environmental racism because of the number of cases in neighborhoods where vast majority of minorities, Hispanics and African-Americans, are unjustly subjugated to environmental pollution hazards. Historically, these hazard problems have been located in low-income neighborhoods. In addition, only a few comprehensive studies of the health effects of people living in these effective communities have been conducted.

This is why I ask my colleagues to support my amendment. It would study the relationship between transportation system designs and its effects, including environmental justice issues on low-income and/or minority communities.

People who live in these communities, environmentally hazard environments, have serious health problems due to toxins, cancer, respiratory problems, birth defects are all very prevalent, and why should these people have these problems? They have the fundamental right to live in environmentally safe neighborhoods where they can breathe the clean air without developing life-crippling health problems.

And with research, I think there would not be a problem in attempting to correct such, but in order to solve them, we need the help of three entities working together to wipe this out: federal, state, and most importantly, corporate officials need to take responsibility in restoring our neighborhoods.

It is a partnership that all of us have to undertake and make a lasting commitment to abolish environmental racism, institute environmental justice for all of us, and I urge my colleagues—

Chairman SENSENBRENNER. Will the gentlewoman yield?

Ms. JOHNSON. I shall.

Chairman SENSENBRENNER. Recognizing the provisions of Section 6141 of this bill do not prevent the type of research the gentlewoman is seeking, would the gentlewoman be willing to withdraw her amendment with the agreement that Committee staff would work with her staff to accommodate her concerns in Committee report language?

Ms. JOHNSON. I will.

Chairman SENSENBRENNER. Without objection, the amendment is withdrawn.

For what purpose does the gentleman from Michigan seek recognition?

Mr. EHLERS. Mr. Chairman, just a comment on—

Chairman SENSENBRENNER. The gentleman is recognized for 5 minutes.

Mr. EHLERS. Thank you. Just briefly, I hope as you go through this with the staff that you define, “environmental justice,” because I had some concerns about that. This is a relatively new term that is used in many different ways, and I think it would be very important to have an agreed-upon definition in this bill to guide those working on this issue.

Thank you.

Chairman SENSENBRENNER. The gentleman’s time is expired.

The gentleman from California, Mr. Brown.

Mr. BROWN of California. Mr. Chairman, I move to strike the last word.

Chairman SENSENBRENNER. The gentleman is recognized for 5 minutes.

Mr. BROWN of California. I have the same concerns as Mr. Ehlers did about the problem of defining environmental justice. I have been working on how to define just "justice," per se, for the last 30 years, and I have not come up with a very good definition.

But if you substitute a colloquial phrase, "the other side of the tracks," which I grew up learning to understand, it is a situation where the poor, which are generally the minorities, live on one side of town, divided by either the railroad or the freeway, or both, which happens very frequently.

You can begin to get a sense or a feel for what environmental justice is. First of all, the segregation by that barrier is not just, to begin with, and secondly, the adverse impact of living next to a freeway or a railroad track for a number of environmental reasons are not particularly good.

I think it is possible to suggest a definition, although I would not want to push it too far in terms of the precision with which one could do it.

Chairman SENSENBRENNER. The gentleman's time has expired.

Are there any further amendments to the bill?

If not, the question is on the bill.

Those in favor will signify by saying, "Aye."

Opposed, no.

The ayes have it.

The Chair recognizes the gentleman from California for a motion to report the bill.

Mr. BROWN of California. Mr. Chairman, I have a motion to report the bill right here somewhere.

Chairman SENSENBRENNER. The Chair notes the presence of a—

The gentleman from California.

Mr. BROWN of California. I want to report the bill H.R. 860, Surface Transportation Research and Development Act of 1997, as amended.

Furthermore, I vote to instruct the staff to prepare the legislative reports and to make the technical and confirming amendments, and that the Chairman take all necessary steps to bring the bill before the House for consideration.

Chairman SENSENBRENNER. The question is on the motion.

Those in favor will signify by saying, "Aye."

Opposed, no.

The ayes have it.

The Chair notes a presence of a reporting quorum and the bill is reported.

Mr. BROWN of California. Mr. Chairman?

Chairman SENSENBRENNER. The gentleman from California.

Mr. BROWN of California. Before we adjourn, I noted that last week's announcement indicated we would take up H.R. 12, and that was superseded by an announcement that indicated we were not taking it up.

Chairman SENSENBRENNER. That will be taken up later.

Mr. BROWN of California. Would the gentleman care to share the reasons for that, Mr. Chairman?

Chairman SENSENBRENNER. The Subcommittee wants to hold a hearing on that bill.

Mr. BROWN of California. That is an adequate reason.

Chairman SENSENBRENNER. Without objection, members have 2 subsequent calendar days in which to submit supplemental, Minority or additional views on the measure, and without objection, pursuant to Clause 1 of Rule 20 of the Rules of the House of Representatives, the Committee authorizes the Chair to offer such motions as may be necessary in the House to go to conference with the Senate on the bill.

Hearing no objection, so ordered.

The gentleman from Michigan, Mr. Ehlers.

Mr. EHLERS. Mr. Chairman, an inquiry. I have been watching the assassination on TV over there. Is that a product of the technological innovations we have in the last few years?

Chairman SENSENBRENNER. Partly that and partly the fact that we expect an overflow crowd on tomorrow's hearing on mirror safety, and we want the people who will be sent to the Annex, in Room 2325 to be able to hear all of what is going on.

The Mir safety hearing will start promptly at 9:30 tomorrow. I urge all members to be prompt. This will be one of our most interesting hearings this year.

Is there further business to come before the Committee?

If not, the Committee stands adjourned.

[Whereupon, at 2:50 p.m., the Committee was adjourned.]