

- (A) the identification of a need;
- (B) the establishment of the scope of research to address that need;
- (C) setting an agenda;
- (D) carrying out research, development, deployment, and testing of the resulting technology or innovation; and
- (E) carrying out an evaluation of the costs and benefits of the resulting technology or innovation.

(4) INTELLIGENT TRANSPORTATION INFRASTRUCTURE.—The term “intelligent transportation infrastructure” means fully integrated public sector intelligent transportation system components, as defined by the Secretary.

(5) INTELLIGENT TRANSPORTATION SYSTEM.—The terms “intelligent transportation system” and “ITS” mean electronics, photonics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

(6) NATIONAL ARCHITECTURE.—For purposes of this chapter, the term “national architecture” means the common framework for interoperability that defines—

- (A) the functions associated with intelligent transportation system user services;
- (B) the physical entities or subsystems within which the functions reside;
- (C) the data interfaces and information flows between physical subsystems; and
- (D) the communications requirements associated with the information flows.

(7) PROJECT.—The term “project” means an undertaking to research, develop, or operationally test intelligent transportation systems or any other undertaking eligible for assistance under this chapter.

(8) SAFETY.—The term “safety” includes highway and traffic safety systems, research, and development relating to vehicle, highway, driver, passenger, bicyclist, and pedestrian characteristics, accident investigations, communications, emergency medical care, and transportation of the injured.

(9) STANDARD.—The term “standard” means a document that—

- (A) contains technical specifications or other precise criteria for intelligent transportation systems that are to be used consistently as rules, guidelines, or definitions of characteristics so as to ensure that materials, products, processes, and services are fit for the intended purposes of the materials, products, processes, and services; and
- (B) may support the national architecture and promote—

- (i) the widespread use and adoption of intelligent transportation system technology as a component of the surface transportation systems of the United States; and
- (ii) interoperability among intelligent transportation system technologies implemented throughout the States.

(Added Pub. L. 105-178, title V, § 5101(2), June 9, 1998, 112 Stat. 422; amended Pub. L. 112-141, div. E, title II, § 2001, July 6, 2012, 126 Stat. 865.)

PRIOR PROVISIONS

A prior section 501, added Pub. L. 90-495, § 30, Aug. 23, 1968, 82 Stat. 830, related to declaration of policy as to highway relocation assistance, prior to repeal by Pub. L. 91-646, title II, § 220(a)(10), Jan. 2, 1971, 84 Stat. 1903.

AMENDMENTS

2012—Pars. (2) to (9). Pub. L. 112-141 added pars. (2) to (7), redesignated former par. (2) as (8), and added par. (9).

EFFECTIVE DATE OF 2012 AMENDMENT

Amendment by Pub. L. 112-141 effective Oct. 1, 2012, see section 3(a) of Pub. L. 112-141, set out as an Effective and Termination Dates of 2012 Amendment note under section 101 of this title.

AUTHORIZATION OF APPROPRIATIONS

Pub. L. 114-94, div. A, title VI, § 6002, Dec. 4, 2015, 129 Stat. 1561, provided that:

“(a) IN GENERAL.—The following amounts are authorized to be appropriated out of the Highway Trust Fund (other than the Mass Transit Account):

“(1) HIGHWAY RESEARCH AND DEVELOPMENT PROGRAM.—To carry out section 503(b) of title 23, United States Code, \$125,000,000 for each of fiscal years 2016 through 2020.

“(2) TECHNOLOGY AND INNOVATION DEPLOYMENT PROGRAM.—To carry out section 503(c) of title 23, United States Code—

“(A) \$67,000,000 for fiscal year 2016;

“(B) \$67,500,000 for fiscal year 2017;

“(C) \$67,500,000 for fiscal year 2018;

“(D) \$67,500,000 for fiscal year 2019; and

“(E) \$67,500,000 for fiscal year 2020.

“(3) TRAINING AND EDUCATION.—To carry out section 504 of title 23, United States Code, \$24,000,000 for each of fiscal years 2016 through 2020.

“(4) INTELLIGENT TRANSPORTATION SYSTEMS PROGRAM.—To carry out sections 512 through 518 of title 23, United States Code, \$100,000,000 for each of fiscal years 2016 through 2020.

“(5) UNIVERSITY TRANSPORTATION CENTERS PROGRAM.—To carry out section 5505 of title 49, United States Code—

“(A) \$72,500,000 for fiscal year 2016;

“(B) \$75,000,000 for fiscal year 2017;

“(C) \$75,000,000 for fiscal year 2018;

“(D) \$77,500,000 for fiscal year 2019; and

“(E) \$77,500,000 for fiscal year 2020.

“(6) BUREAU OF TRANSPORTATION STATISTICS.—To carry out chapter 63 of title 49, United States Code, \$26,000,000 for each of fiscal years 2016 through 2020.

“(b) ADMINISTRATION.—The Federal Highway Administration shall—

“(1) administer the programs described in paragraphs (1), (2), and (3) of subsection (a); and

“(2) in consultation with relevant modal administrations, administer the programs described in subsection (a)(4).

“(c) APPLICABILITY OF TITLE 23, UNITED STATES CODE.—Funds authorized to be appropriated by subsection (a) shall—

“(1) be available for obligation in the same manner as if those funds were apportioned under chapter 1 of title 23, United States Code, except that the Federal share of the cost of a project or activity carried out using those funds shall be 80 percent, unless otherwise expressly provided by this Act [div. A of Pub. L. 114-94, see Tables for classification] (including the amendments by this Act) or otherwise determined by the Secretary [of Transportation]; and

“(2) remain available until expended and not be transferable, except as otherwise provided in this Act.”

§ 502. Surface transportation research, development, and technology

(a) BASIC PRINCIPLES GOVERNING RESEARCH AND TECHNOLOGY INVESTMENTS.—

(1) **APPLICABILITY.**—The research, development, and technology provisions of this section shall apply throughout this chapter.

(2) **COVERAGE.**—Surface transportation research and technology development shall include all activities within the innovation lifecycle leading to technology development and transfer, as well as the introduction of new and innovative ideas, practices, and approaches, through such mechanisms as field applications, education and training, communications, impact analysis, and technical support.

(3) **FEDERAL RESPONSIBILITY.**—Funding and conducting surface transportation research and technology transfer activities shall be considered a basic responsibility of the Federal Government when the work—

(A) is of national significance;

(B) delivers a clear public benefit and occurs where private sector investment is less than optimal;

(C) supports a Federal stewardship role in assuring that State and local governments use national resources efficiently;

(D) meets and addresses current or emerging needs;

(E) addresses current gaps in research;

(F) presents the best means to align resources with multiyear plans and priorities;

(G) ensures the coordination of highway research and technology transfer activities, including through activities performed by university transportation centers;

(H) educates transportation professionals; or

(I) presents the best means to support Federal policy goals compared to other policy alternatives.

(4) **ROLE.**—Consistent with these Federal responsibilities, the Secretary shall—

(A) conduct research;

(B) partner with State highway agencies and other stakeholders as appropriate to facilitate research and technology transfer activities;

(C) communicate the results of ongoing and completed research;

(D) lead efforts to coordinate national emphasis areas of highway research, technology, and innovation deployment;

(E) leverage partnerships with industry, academia, international entities, and State departments of transportation;

(F) lead efforts to reduce unnecessary duplication of effort; and

(G) lead efforts to accelerate innovation delivery.

(5) **PROGRAM CONTENT.**—A surface transportation research program shall include—

(A) fundamental, long-term highway research;

(B) research aimed at significant highway research gaps and emerging issues with national implications; and

(C) research related to all highway objectives seeking to improve the performance of the transportation system.

(6) **STAKEHOLDER INPUT.**—Federal surface transportation research and development ac-

tivities shall address the needs of stakeholders. Stakeholders include States, metropolitan planning organizations, local governments, tribal governments, the private sector, researchers, research sponsors, and other affected parties, including public interest groups.

(7) **COMPETITION AND PEER REVIEW.**—Except as otherwise provided in this chapter, the Secretary shall award, to the maximum extent practicable, all grants, contracts, and cooperative agreements for research and development under this chapter based on open competition and peer review of proposals.

(8) **PERFORMANCE REVIEW AND EVALUATION.**—

(A) **IN GENERAL.**—To the maximum extent practicable, all surface transportation research and development projects shall include a component of performance measurement and evaluation.

(B) **PERFORMANCE MEASURES.**—Performance measures shall be established during the proposal stage of a research and development project and shall, to the maximum extent possible, be outcome-based.

(C) **PROGRAM PLAN.**—To the maximum extent practicable, each program pursued under this chapter shall be part of a data-driven, outcome-oriented program plan.

(D) **AVAILABILITY OF EVALUATIONS.**—All evaluations under this paragraph shall be made readily available to the public.

(9) **TECHNOLOGICAL INNOVATION.**—The programs and activities carried out under this section shall be consistent with the transportation research and development strategic plan under section 6503 of title 49.

(b) **GENERAL AUTHORITY.**—

(1) **RESEARCH, DEVELOPMENT, AND TECHNOLOGY TRANSFER ACTIVITIES.**—The Secretary may carry out research, development, and technology transfer activities with respect to—

(A) motor carrier transportation;

(B) all phases of transportation planning and development (including construction, operation, transportation system management and operations, modernization, development, design, maintenance, safety, financing, and traffic conditions); and

(C) the effect of State laws on the activities described in subparagraphs (A) and (B).

(2) **TESTS AND DEVELOPMENT.**—The Secretary may test, develop, or assist in testing and developing any material, invention, patented article, or process.

(3) **COOPERATION, GRANTS, AND CONTRACTS.**—The Secretary may carry out research, development, and technology transfer activities related to transportation—

(A) independently;

(B) in cooperation with other Federal departments, agencies, and instrumentalities and Federal laboratories; or

(C) by making grants to, or entering into contracts and cooperative agreements with one or more of the following: the National Academy of Sciences, the American Association of State Highway and Transportation Officials, any Federal laboratory, Federal

agency, State agency, authority, association, institution, for-profit or nonprofit corporation, organization, foreign country, or any other person.

(4) **TECHNOLOGICAL INNOVATION.**—The programs and activities carried out under this section shall be consistent with the transportation research and development strategic plan under section 6503 of title 49.

(5) **FUNDS.**—

(A) **SPECIAL ACCOUNT.**—In addition to other funds made available to carry out this chapter, the Secretary shall use such funds as may be deposited by any cooperating organization or person in a special account of the Treasury established for this purpose.

(B) **USE OF FUNDS.**—The Secretary shall use funds made available to carry out this chapter to develop, administer, communicate, and promote the use of products of research, development, and technology transfer programs under this chapter.

(6) **POOLED FUNDING.**—

(A) **COOPERATION.**—To promote effective utilization of available resources, the Secretary may cooperate with a State and an appropriate agency in funding research, development, and technology transfer activities of mutual interest on a pooled funds basis.

(B) **SECRETARY AS AGENT.**—The Secretary may enter into contracts, cooperative agreements, and grants as the agent for all participating parties in carrying out such research, development, or technology transfer activities.

(C) **TRANSFER OF AMOUNTS AMONG STATES OR TO FEDERAL HIGHWAY ADMINISTRATION.**—The Secretary may, at the request of a State, transfer amounts apportioned or allocated to that State under this chapter to another State or the Federal Highway Administration to fund research, development, and technology transfer activities of mutual interest on a pooled funds basis.

(D) **TRANSFER OF OBLIGATION AUTHORITY.**—Obligation authority for amounts transferred under this subsection shall be disbursed in the same manner and for the same amount as provided for the project being transferred.

(7) **PRIZE COMPETITIONS.**—

(A) **IN GENERAL.**—The Secretary may use up to 1 percent of the funds made available under section 51001 of the Transportation Research and Innovative Technology Act of 2012 to carry out a program to competitively award cash prizes to stimulate innovation in basic and applied research and technology development that has the potential for application to the national transportation system.

(B) **TOPICS.**—In selecting topics for prize competitions under this paragraph, the Secretary shall—

(i) consult with a wide variety of governmental and nongovernmental representatives; and

(ii) give consideration to prize goals that demonstrate innovative approaches and

strategies to improve the safety, efficiency, and sustainability of the national transportation system.

(C) **ADVERTISING.**—The Secretary shall encourage participation in the prize competitions through advertising efforts.

(D) **REQUIREMENTS AND REGISTRATION.**—For each prize competition, the Secretary shall publish a notice on a public website that describes—

- (i) the subject of the competition;
- (ii) the eligibility rules for participation in the competition;
- (iii) the amount of the prize; and
- (iv) the basis on which a winner will be selected.

(E) **ELIGIBILITY.**—An individual or entity may not receive a prize under this paragraph unless the individual or entity—

- (i) has registered to participate in the competition pursuant to any rules promulgated by the Secretary under this section;
- (ii) has complied with all requirements under this paragraph;

(iii)(I) in the case of a private entity, is incorporated in, and maintains a primary place of business in, the United States; or

(II) in the case of an individual, whether participating singly or in a group, is a citizen or permanent resident of the United States;

(iv) is not a Federal entity or Federal employee acting within the scope of his or her employment; and

(v) has not received a grant to perform research on the same issue for which the prize is awarded.

(F) **LIABILITY.**—

(i) **ASSUMPTION OF RISK.**—

(I) **IN GENERAL.**—A registered participant shall agree to assume any and all risks and waive claims against the Federal Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from participation in a competition, whether such injury, death, damage, or loss arises through negligence or otherwise.

(II) **RELATED ENTITY.**—In this subparagraph, the term “related entity” means a contractor, subcontractor (at any tier), supplier, user, customer, cooperating party, grantee, investigator, or detailee.

(ii) **FINANCIAL RESPONSIBILITY.**—A participant shall obtain liability insurance or demonstrate financial responsibility, in amounts determined by the Secretary, for claims by—

(I) a third party for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with participation in a competition, with the Federal Government named as an additional insured under the registered participant’s insurance policy and registered participants agree-

ing to indemnify the Federal Government against third party claims for damages arising from or related to competition activities; and

(II) the Federal Government for damage or loss to Government property resulting from such an activity.

(G) JUDGES.—

(i) SELECTION.—Subject to clause (iii), for each prize competition, the Secretary, either directly or through an agreement under subparagraph (H), may appoint 1 or more qualified judges to select the winner or winners of the prize competition on the basis of the criteria described in subparagraph (D).

(ii) SELECTION.—Judges for each competition shall include individuals from outside the Federal Government, including the private sector.

(iii) LIMITATIONS.—A judge selected under this subparagraph may not—

(I) have personal or financial interests in, or be an employee, officer, director, or agent of, any entity that is a registered participant in a prize competition under this paragraph; or

(II) have a familial or financial relationship with an individual who is a registered participant.

(H) ADMINISTERING THE COMPETITION.—The Secretary may enter into an agreement with a private, nonprofit entity to administer the prize competition, subject to the provisions of this paragraph.

(I) FUNDING.—

(i) IN GENERAL.—

(I) PRIVATE SECTOR FUNDING.—A cash prize under this paragraph may consist of funds appropriated by the Federal Government and funds provided by the private sector.

(II) GOVERNMENT FUNDING.—The Secretary may accept funds from other Federal agencies, State and local governments, and metropolitan planning organizations for a cash prize under this paragraph.

(III) NO SPECIAL CONSIDERATION.—The Secretary may not give any special consideration to any private sector entity in return for a donation under this subparagraph.

(ii) AVAILABILITY OF FUNDS.—Notwithstanding any other provision of law, amounts appropriated for prize awards under this paragraph—

(I) shall remain available until expended; and

(II) may not be transferred, reprogrammed, or expended for other purposes until after the expiration of the 10-year period beginning on the last day of the fiscal year for which the funds were originally appropriated.

(iii) SAVINGS PROVISION.—Nothing in this subparagraph may be construed to permit the obligation or payment of funds in violation of the Anti-Deficiency Act (31 U.S.C. 1341).

(iv) PRIZE ANNOUNCEMENT.—A prize may not be announced under this paragraph until all the funds needed to pay out the announced amount of the prize have been appropriated by a governmental source or committed to in writing by a private source.

(v) PRIZE INCREASES.—The Secretary may increase the amount of a prize after the initial announcement of the prize under this paragraph if—

(I) notice of the increase is provided in the same manner as the initial notice of the prize; and

(II) the funds needed to pay out the announced amount of the increase have been appropriated by a governmental source or committed to in writing by a private source.

(vi) CONGRESSIONAL NOTIFICATION.—A prize competition under this paragraph may offer a prize in an amount greater than \$1,000,000 only after 30 days have elapsed after written notice has been transmitted to the Committee on Commerce, Science, and Transportation of the Senate and the Committees on Transportation and Infrastructure and Science, Space, and Technology of the House of Representatives.

(vii) AWARD LIMIT.—A prize competition under this section may not result in the award of more than \$25,000 in cash prizes without the approval of the Secretary.

(J) COMPLIANCE WITH EXISTING LAW.—The Federal Government shall not, by virtue of offering or providing a prize under this paragraph, be responsible for compliance by registered participants in a prize competition with Federal law, including licensing, export control, and non-proliferation laws, and related regulations.

(K) NOTICE AND ANNUAL REPORT.—

(i) IN GENERAL.—Not later than 30 days prior to carrying out an activity under subparagraph (A), the Secretary shall notify the Committees on Transportation and Infrastructure and Science, Space, and Technology of the House of Representatives and the Committees on Environment and Public Works and Commerce, Science, and Transportation of the Senate of the intent to use such authority.

(ii) REPORTS.—

(I) IN GENERAL.—The Secretary shall submit to the committees described in clause (i) on an annual basis a report on the activities carried out under subparagraph (A) in the preceding fiscal year if the Secretary exercised the authority under subparagraph (A) in that fiscal year.

(II) INFORMATION INCLUDED.—A report under this subparagraph shall include, for each prize competition under subparagraph (A)—

(aa) a description of the proposed goals of the prize competition;

(bb) an analysis of why the use of the authority under subparagraph (A) was

the preferable method of achieving the goals described in item (aa) as opposed to other authorities available to the Secretary, such as contracts, grants, and cooperative agreements;

(cc) the total amount of cash prizes awarded for each prize competition, including a description of the amount of private funds contributed to the program, the source of such funds, and the manner in which the amounts of cash prizes awarded and claimed were allocated among the accounts of the Department for recording as obligations and expenditures;

(dd) the methods used for the solicitation and evaluation of submissions under each prize competition, together with an assessment of the effectiveness of such methods and lessons learned for future prize competitions;

(ee) a description of the resources, including personnel and funding, used in the execution of each prize competition together with a detailed description of the activities for which such resources were used and an accounting of how funding for execution was allocated among the accounts of the agency for recording as obligations and expenditures; and

(ff) a description of how each prize competition advanced the mission of the Department.

(c) COLLABORATIVE RESEARCH AND DEVELOPMENT.—

(1) IN GENERAL.—To encourage innovative solutions to surface transportation problems and stimulate the deployment of new technology, the Secretary may carry out, on a cost-shared basis, collaborative research and development with—

(A) non-Federal entities, including State and local governments, foreign governments, colleges and universities, corporations, institutions, partnerships, sole proprietorships, and trade associations that are incorporated or established under the laws of any State; and

(B) Federal laboratories.

(2) COOPERATION, GRANTS, CONTRACTS, AND AGREEMENTS.—Notwithstanding any other provision of law, the Secretary may directly initiate contracts, cooperative research and development agreements (as defined in section 12 of the Stevenson-Wylder Technology Innovation Act of 1980 (15 U.S.C. 3710a)) to fund, and accept funds from, the Transportation Research Board of the National Research Council of the National Academy of Sciences, State departments of transportation, cities, counties, and their agents to conduct joint transportation research and technology efforts.

(3) FEDERAL SHARE.—

(A) IN GENERAL.—The Federal share of the cost of activities carried out under a cooperative research and development agreement entered into under this chapter shall not exceed 80 percent, except that if there is substantial public interest or benefit, the Secretary may approve a greater Federal share.

(B) NON-FEDERAL SHARE.—All costs directly incurred by the non-Federal partners, including personnel, travel, and hardware development costs, shall be credited toward the non-Federal share of the cost of the activities described in subparagraph (A).

(4) USE OF TECHNOLOGY.—The research, development, or use of a technology under a cooperative research and development agreement entered into under this chapter, including the terms under which the technology may be licensed and the resulting royalties may be distributed, shall be subject to the Stevenson-Wylder Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.).

(5) WAIVER OF ADVERTISING REQUIREMENTS.—Section 6101(b) to (d) of title 41 shall not apply to a contract or agreement entered into under this chapter.

(Added Pub. L. 105–178, title V, §5102, June 9, 1998, 112 Stat. 422; amended Pub. L. 109–59, title V, §§5201(b)–(g), (i)(1), (j)(1), (k), (l), 5202(a)(1), Aug. 10, 2005, 119 Stat. 1781–1785; Pub. L. 110–244, title I, §111(g)(1), June 6, 2008, 122 Stat. 1605; Pub. L. 111–350, §5(e)(2), Jan. 4, 2011, 124 Stat. 3847; Pub. L. 112–141, div. E, title II, §52002(a), July 6, 2012, 126 Stat. 866; Pub. L. 114–94, div. A, title VI, §6019(d)(1)(C), Dec. 4, 2015, 129 Stat. 1581.)

REFERENCES IN TEXT

Section 51001 of the Transportation Research and Innovative Technology Act of 2012, referred to in subsec. (b)(7)(A), is section 51001 of title I of div. E of Pub. L. 112–141, which is not classified to the Code.

The Stevenson-Wylder Technology Innovation Act of 1980, referred to in subsec. (c)(4), is Pub. L. 96–480, Oct. 21, 1980, 94 Stat. 2311, which is classified generally to chapter 63 (§3701 et seq.) of Title 15, Commerce and Trade. For complete classification of this Act to the Code, see Short title note set out under section 3701 of Title 15 and Tables.

PRIOR PROVISIONS

A prior section 502, added Pub. L. 90–495, §30, Aug. 23, 1968, 82 Stat. 831, related to State assurances of adequate highway relocation assistance program, prior to repeal by Pub. L. 91–646, title II, §220(a)(10), Jan. 2, 1971, 84 Stat. 1903.

AMENDMENTS

2015—Subsec. (a)(9). Pub. L. 114–94, §6019(d)(1)(C)(i), substituted “transportation research and development strategic plan under section 6503 of title 49” for “transportation research and technology development strategic plan developed under section 508”.

Subsec. (b)(4). Pub. L. 114–94, §6019(d)(1)(C)(ii), substituted “transportation research and development strategic plan under section 6503 of title 49” for “transportation research and development strategic plan of the Secretary developed under section 508”.

2012—Pub. L. 112–141, §52002(a)(1), which directed insertion of “, development, and technology” after “surface transportation research” in section catchline, was executed by making the insertion after “Surface transportation research”, to reflect the probable intent of Congress.

Subsec. (a)(1). Pub. L. 112–141, §52002(a)(2)(B), added par. (1). Former par. (1) redesignated (2).

Subsec. (a)(2). Pub. L. 112–141, §52002(a)(2)(A), (C), redesignated par. (1) as (2) and inserted “within the innovation lifecycle” after “activities” and “communications, impact analysis,” after “training,”. Former par. (2) redesignated (3).

Subsec. (a)(3). Pub. L. 112–141, § 52002(a)(2)(A), redesignated par. (2) as (3). Former par. (3) redesignated (4).

Subsec. (a)(3)(B). Pub. L. 112–141, § 52002(a)(2)(D)(i), substituted “delivers a clear public benefit and occurs where” for “supports research in which there is a clear public benefit and”.

Subsec. (a)(3)(D) to (I). Pub. L. 112–141, § 52002(a)(2)(D)(ii)–(iv), added subpars. (D) to (H) and redesignated former subpar. (D) as (I).

Subsec. (a)(4). Pub. L. 112–141, § 52002(a)(2)(A), redesignated par. (3) as (4). Former par. (4) redesignated (5).

Subsec. (a)(4)(B) to (G). Pub. L. 112–141, § 52002(a)(2)(E), added subpars. (B) to (G) and struck out former subpars. (B) to (D) which read as follows:

“(B) support and facilitate research and technology transfer activities by State highway agencies;

“(C) share results of completed research; and

“(D) support and facilitate technology and innovation deployment.”

Subsec. (a)(5). Pub. L. 112–141, § 52002(a)(2)(A), redesignated par. (4) as (5). Former par. (5) redesignated (6).

Subsec. (a)(5)(C). Pub. L. 112–141, § 52002(a)(2)(F), substituted “all highway objectives seeking to improve the performance of the transportation system” for “policy and planning”.

Subsec. (a)(6). Pub. L. 112–141, § 52002(a)(2)(A), (G), redesignated par. (5) as (6) and inserted “tribal governments,” after “local governments.” Former par. (6) redesignated (7).

Subsec. (a)(7). Pub. L. 112–141, § 52002(a)(2)(A), redesignated par. (6) as (7). Former par. (7) redesignated (8).

Subsec. (a)(8). Pub. L. 112–141, § 52002(a)(2)(A), (H), redesignated par. (7) as (8), designated first, second, and third sentences as subpars. (A), (B), and (D), respectively, inserted subpar. headings, substituted “All evaluations under this paragraph” for “All evaluations” in subpar. (D), and added subpar. (C). Former par. (8) redesignated (9).

Subsec. (a)(9). Pub. L. 112–141, § 52002(a)(2)(A), (I), redesignated par. (8) as (9) and struck out “surface” before “transportation research”.

Subsec. (b)(4). Pub. L. 112–141, § 52002(a)(3)(A), substituted “transportation research and development strategic plan of the Secretary developed under section 508” for “surface transportation research and technology development strategic plan developed under section 508”.

Subsec. (b)(5). Pub. L. 112–141, § 52002(a)(3)(B), substituted “chapter” for “section” wherever appearing.

Subsec. (b)(6)(C), (D). Pub. L. 112–141, § 52002(a)(3)(C), added subpars. (C) and (D).

Subsec. (b)(7). Pub. L. 112–141, § 52002(a)(3)(D), added par. (7).

Subsec. (c)(3)(A). Pub. L. 112–141, § 52002(a)(4)(A), substituted “chapter” for “subsection” and “80” for “50”.

Subsec. (c)(4). Pub. L. 112–141, § 52002(a)(4)(B), substituted “chapter” for “subsection”.

Subsecs. (d) to (j). Pub. L. 112–141, § 52002(a)(5), struck out subsecs. (d) to (j) relating to contents of research program, exploratory advanced research, long-term pavement performance program, seismic research, infrastructure investment needs report, Turner-Fairbank Highway Research Center, and long-term bridge performance program, respectively.

2011—Subsec. (c)(5). Pub. L. 111–350 substituted “Section 6101(b) to (d) of title 41” for “Section 3709 of the Revised Statutes (41 U.S.C. 5)”.

2008—Subsec. (h). Pub. L. 110–244 struck out subsec. (h) relating to infrastructure investment needs report to be submitted not later than Jan. 31, 1999, and Jan. 31 of every second year thereafter.

2005—Subsec. (a). Pub. L. 109–59, § 5201(b)(2), added subsec. (a). Former subsec. (a) redesignated (b).

Subsec. (b). Pub. L. 109–59, § 5201(b)(1), redesignated subsec. (a) as (b). Former subsec. (b) redesignated (c).

Subsec. (b)(1)(B). Pub. L. 109–59, § 5201(e)(1), inserted “transportation system management and operations,” after “operation.”

Subsec. (b)(3). Pub. L. 109–59, § 5201(c), reenacted heading without change and amended text of par. (3) gener-

ally. Prior to amendment, text read as follows: “The Secretary may carry out this section—

“(A) independently;

“(B) in cooperation with other Federal departments, agencies, and instrumentalities and Federal laboratories; or

“(C) by making grants to, or entering into contracts, cooperative agreements, and other transactions with, the National Academy of Sciences, the American Association of State Highway and Transportation Officials, or any Federal laboratory, State agency, authority, association, institution, for-profit or nonprofit corporation, organization, foreign country, or person.”

Subsec. (b)(6). Pub. L. 109–59, § 5201(d), added par. (6).

Subsec. (c). Pub. L. 109–59, § 5201(b)(1), redesignated subsec. (b) as (c). Former subsec. (c) redesignated (d).

Subsec. (c)(2). Pub. L. 109–59, § 5201(f), amended heading and text of par. (2) generally. Prior to amendment, text read as follows: “In carrying out this subsection, the Secretary may enter into cooperative research and development agreements (as defined in section 12 of the Stevenson-Wylder Technology Innovation Act of 1980 (15 U.S.C. 3710a)).”

Subsec. (d). Pub. L. 109–59, § 5201(b)(1), redesignated subsec. (c) as (d). Former subsec. (d) redesignated (e).

Subsec. (d)(5)(C). Pub. L. 109–59, § 5201(e)(2), inserted “system management and” before “operations programs”.

Subsec. (d)(12) to (14). Pub. L. 109–59, § 5201(e)(3), added pars. (12) to (14).

Subsec. (e). Pub. L. 109–59, § 5201(g), amended heading and text of subsec. (e) generally, substituting provisions relating to exploratory advanced research for provisions relating to establishment of an advanced research program and authorizing the Secretary to make grants and enter into cooperative agreements and contracts in such areas including: characterization of materials used in highway infrastructure; diagnostics for evaluation of the condition of bridge and pavement structures to enable the assessment of risks of failure; design and construction details for composite structures; safety technology-based problems in the areas of pedestrian and bicycle safety, roadside hazards, and composite materials for roadside safety hardware; environmental research, including particulate matter source apportionment and model development; data acquisition techniques for system condition and performance monitoring; and human factors, including prediction of the response of travelers to new technologies.

Pub. L. 109–59, § 5201(b)(1), redesignated subsec. (d) as (e). Former subsec. (e) redesignated (f).

Subsec. (f). Pub. L. 109–59, § 5201(i)(1), reenacted heading without change and amended text of subsec. (f) generally, substituting provisions authorizing tests, monitoring, and data analysis under the long-term pavement performance program through Sept. 30, 2009, for provisions directing the completion of long-term pavement performance program tests through the midpoint of a planned 20-year life of the long-term pavement performance program.

Pub. L. 109–59, § 5201(b)(1), redesignated subsec. (e) as (f). Former subsec. (f) redesignated (g).

Subsec. (g). Pub. L. 109–59, § 5201(j)(1), amended heading and text of subsec. (g) generally. Prior to amendment, subsec. (g) directed the Secretary to establish a seismic research program and to conduct such program in cooperation with the National Center for Earthquake Engineering Research at the University of Buffalo and in consultation and cooperation with Federal departments and agencies participating in the National Earthquake Hazards Reduction Program.

Pub. L. 109–59, § 5201(b)(1), redesignated subsec. (f) as (g). Former subsec. (g) redesignated (h).

Subsec. (h). Pub. L. 109–59, § 5201(k), added subsec. (h) relating to infrastructure investment needs report to be submitted not later than July 31, 2006, and July 31 of every second year thereafter.

Pub. L. 109–59, § 5201(b)(1), redesignated subsec. (g), relating to infrastructure investment needs report to be

submitted not later than Jan. 31, 1999, and Jan. 31 of every second year thereafter, as (h).

Subsec. (i). Pub. L. 109-59, § 5201(l), added subsec. (i).
Subsec. (j). Pub. L. 109-59, § 5202(a)(1), added subsec. (j).

EFFECTIVE DATE OF 2015 AMENDMENT

Amendment by Pub. L. 114-94 effective Oct. 1, 2015, see section 1003 of Pub. L. 114-94, set out as a note under section 5313 of Title 5, Government Organization and Employees.

EFFECTIVE DATE OF 2012 AMENDMENT

Amendment by Pub. L. 112-141 effective Oct. 1, 2012, see section 3(a) of Pub. L. 112-141, set out as an Effective and Termination Dates of 2012 Amendment note under section 101 of this title.

TRANSPORTATION SAFETY INFORMATION MANAGEMENT SYSTEM PROJECT

Pub. L. 109-59, title V, § 5501, Aug. 10, 2005, 119 Stat. 1820, provided that:

“(a) IN GENERAL.—The Secretary [of Transportation] shall fund and carry out a project to further the development of a comprehensive transportation safety information management system (in this section referred to as ‘TSIMS’).

“(b) PURPOSES.—The purpose of the TSIMS project is to further the development of a software application to provide for the collection, integration, management, and dissemination of safety data from and for use among State and local safety and transportation agencies, including driver licensing, vehicle registration, emergency management system, injury surveillance, roadway inventory, and motor carrier databases.

“(c) FUNDING.—

“(1) FEDERAL FUNDING.—Of the amounts made available by section 5101(a)(1) of this Act [119 Stat. 1779], \$1,000,000 for fiscal years 2006 and 2007 shall be available to carry out the TSIMS project under this section.

“(2) STATE CONTRIBUTION.—The sums authorized in paragraph (1) are intended to supplement voluntary contributions to be made by State departments of transportation and other State safety and transportation agencies.”

SURFACE TRANSPORTATION CONGESTION RELIEF SOLUTIONS RESEARCH INITIATIVE

Pub. L. 109-59, title V, § 5502, Aug. 10, 2005, 119 Stat. 1820, provided that:

“(a) ESTABLISHMENT.—The Secretary [of Transportation] shall establish a surface transportation congestion solutions research initiative consisting of 2 independent research programs described in subsections (b)(1) and (b)(2) and designed to develop information to assist State transportation departments and metropolitan planning organizations [to] measure and address surface transportation congestion problems.

“(b) SURFACE TRANSPORTATION CONGESTION SOLUTIONS RESEARCH PROGRAM.—

“(1) IMPROVED SURFACE TRANSPORTATION CONGESTION MANAGEMENT SYSTEM MEASURES.—The purposes of the first research program established under this section shall be—

“(A) to examine the effectiveness of surface transportation congestion management systems since enactment of the Intermodal Surface Transportation Efficiency Act of 1991 (Public Law 102-240) [Dec. 18, 1991];

“(B) to identify best case examples of locally designed reporting methods and incorporate such methods in research on national models for developing and recommending improved surface transportation congestion measurement and reporting; and

“(C) to incorporate such methods in the development of national models and methods to monitor, measure, and report surface transportation congestion information.

“(2) ANALYTICAL TECHNIQUES FOR ACTION ON SURFACE TRANSPORTATION CONGESTION.—The purposes of the second research program established under this section shall be—

“(A) to analyze the effectiveness of procedures used by State transportation departments and metropolitan planning organizations to assess surface transportation congestion problems and communicate those problems to decisionmakers; and

“(B) to identify methods to ensure that the results of surface transportation congestion analyses lead to the targeting of funding for programs, projects, or services with demonstrated effectiveness in reducing travel delay, congestion, and system unreliability.

“(c) TECHNICAL ASSISTANCE AND TRAINING.—In fiscal year 2006, the Secretary [of Transportation] shall develop a technical assistance and training program to disseminate the results of the surface transportation congestion solutions research initiative for the purpose of assisting State transportation departments and local transportation agencies with improving their approaches to surface transportation congestion measurement, analysis, and project programming.

“(d) FUNDING.—Of the amounts made available by section 5101(a)(1) of this Act [119 Stat. 1779], \$9,000,000 for each of fiscal years 2006 through 2009 shall be available to carry out subsections (a) and (b) of this section. Of the amounts made available by section 5101(a)(2), \$750,000 for each of fiscal years 2006 through 2009 shall be available to carry out subsection (c) of this subsection.”

THERMAL IMAGING

Pub. L. 109-59, title V, § 5513(a), Aug. 10, 2005, 119 Stat. 1829, provided that:

“(1) IN GENERAL.—The Secretary [of Transportation] shall make a grant to carry out a demonstration project that uses a thermal imaging inspection system (TIIS) that leverages state-of-the-art thermal imagery technology, integrated with signature recognition software, providing the capability to identify, in real time, faults and failures in tires, brakes and bearings mounted on commercial motor vehicles.

“(2) USE OF FUNDS.—Funds shall be used—

“(A) to employ a TIIS in a field environment, along the Interstate, to further assess the system’s ability to identify faults in tires, brakes, and bearings mounted on commercial motor vehicles;

“(B) to establish, through statistical analysis, the probability of failure for each component; and

“(C) to develop and integrate a predictive tool into the TIIS, which identifies an impending tire, brake, or bearing failure and provides the use of a time frame in which this failure may occur.

“(3) FUNDING.—Of the amounts made available under section 5101(a)(1) of this Act [119 Stat. 1779], \$2,000,000 in fiscal year 2006 shall be available to carry out this subsection.”

STUDY OF FUTURE STRATEGIC HIGHWAY RESEARCH PROGRAM

Pub. L. 105-178, title V, § 5112, June 9, 1998, 112 Stat. 445, provided that:

“(a) STUDY.—Not later than 120 days after the date of enactment of this Act [June 9, 1998], 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 (in this section referred to 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 Act), 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 appropriate to the conduct of the study.

“(c) REPORT.—Not later than 5 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 Transportation and Infrastructure of the House of Representatives.”

COMMERCIAL REMOTE SENSING PRODUCTS AND SPATIAL INFORMATION TECHNOLOGIES

Pub. L. 109–59, title V, §5506, Aug. 10, 2005, 119 Stat. 1823, provided that:

“(a) IN GENERAL.—The Secretary [of Transportation] shall establish and carry out a program to validate commercial remote sensing products and spatial information technologies for application to national transportation infrastructure development and construction.

“(b) PROGRAM.—

“(1) NATIONAL POLICY.—The Secretary [of Transportation] shall establish and maintain a national policy for the use of commercial remote sensing products and spatial information technologies in national transportation infrastructure development and construction.

“(2) POLICY IMPLEMENTATION.—The Secretary shall develop new applications of commercial remote sensing products and spatial information technologies for the implementation of the national policy established and maintained under paragraph (1).

“(c) COOPERATION.—The Secretary [of Transportation] shall carry out this section in cooperation with a consortium of university research centers.

“(d) FUNDING.—Of the amounts made available by section 5101(a)(1) of this Act [119 Stat. 1779], \$7,750,000 for each of fiscal years 2006 through 2009 shall be available to carry out this section.”

Pub. L. 105–178, title V, §5113, June 9, 1998, 112 Stat. 445, provided that:

“(a) IN GENERAL.—The Secretary shall establish and carry out a program to validate commercial remote sensing products and spatial information technologies for application to national transportation infrastructure development and construction.

“(b) PROGRAM STAGES.—

“(1) FIRST STAGE.—Not later than 18 months after the date of enactment of this Act [June 9, 1998], the Secretary shall establish a national policy for the use of commercial remote sensing products and spatial information technologies in national transportation infrastructure development and construction.

“(2) SECOND STAGE.—After establishment of the national policy under paragraph (1), the Secretary shall develop new applications of commercial remote sensing products and spatial information technologies for the implementation of the national policy.

“(c) COOPERATION.—The Secretary shall carry out this section in cooperation with the Commercial Remote Sensing Program of the National Aeronautics and Space Administration and a consortium of university research centers.

“(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section \$10,000,000 for each of fiscal years 1999 through 2004.”

TRANSPORTATION TECHNOLOGY INNOVATION AND DEMONSTRATION PROGRAM

Pub. L. 109–59, title V, §5204(g), Aug. 10, 2005, 119 Stat. 1794, provided that:

“(1) FUNDAMENTAL PROPERTIES OF ASPHALTS AND MODIFIED ASPHALTS.—The Secretary [of Transportation] shall continue to carry out section 5117(b)(5) of the Transportation Equity Act for the 21st Century [Pub. L. 105–178, set out below] (112 Stat. 450).

“(2) TRANSPORTATION, ECONOMIC, AND LAND USE SYSTEM.—The Secretary shall continue to carry out section 5117(b)(7) of the Transportation Equity Act for the 21st Century (112 Stat. 450).

“(3) FUNDING.—Of the amounts made available by section 5101(a)(1) of this Act [119 Stat. 1779], for each of fiscal years 2005 through 2009 \$4,200,000 shall be available to carry out paragraph (1) and \$1,000,000 shall be available to carry out paragraph (2).”

Pub. L. 105–178, title V, §5117, June 9, 1998, 112 Stat. 448, as amended by Pub. L. 105–206, title IX, §9011(g), (h), July 22, 1998, 112 Stat. 864; Pub. L. 105–277, div. A, §101(g) [title III, §3769 [369]], Oct. 21, 1998, 112 Stat. 2681–439, 2681–478; Pub. L. 107–117, div. B, §1101, Jan. 10, 2002, 115 Stat. 2330; Pub. L. 109–59, title V, §5508, Aug. 10, 2005, 119 Stat. 1824, provided that:

“(a) IN GENERAL.—The Secretary shall carry out a transportation technology innovation and demonstration program in accordance with the requirements of this section.

“(b) CONTENTS OF PROGRAM.—

“(1) MOTOR VEHICLE SAFETY WARNING SYSTEM.—

“(A) IN GENERAL.—The Secretary shall expand and continue the study authorized by section 358(c) of the National Highway System Designation Act of 1995 [Pub. L. 104–59] (23 U.S.C. 401 note; 109 Stat. 625) relating to the development of a motor vehicle safety warning system and shall conduct tests of such system.

“(B) GRANTS.—In carrying out this paragraph, the Secretary may make grants to State and local governments.

“(C) FUNDING.—Of the amounts made available for each of fiscal years 1998 through 2000 by section 5001(a)(2) of this Act [112 Stat. 419], \$700,000 per fiscal year shall be available to carry out this paragraph.

“(2) MOTOR CARRIER ADVANCED SENSOR CONTROL SYSTEM.—

“(A) IN GENERAL.—The Secretary shall conduct research on the deployment of a system of advanced sensors and signal processors in trucks and tractor trailers to determine axle and wheel alignment, monitor collision alarm, check tire pressure and tire balance conditions, measure and detect load distribution in the vehicle, and monitor and adjust automatic braking systems.

“(B) FUNDING.—Of the amounts made available for each of fiscal years 1998 through 2003 by section 5001(a)(2) of this Act, \$700,000 per fiscal year shall be available to carry out this paragraph.

“(3) INTELLIGENT TRANSPORTATION INFRASTRUCTURE.—

“(A) DEFINITIONS.—In this paragraph:

“(i) CONGESTED AREA.—The term ‘congested area’ means a metropolitan area that experiences significant traffic congestion, as determined by the Secretary on an annual basis, including the metropolitan areas of Albany, Atlanta, Austin, Burlington, Charlotte, Columbus, Greensboro, Hartford, Jacksonville, Kansas City, Louisville, Milwaukee, Minneapolis-St. Paul, Nashville, New Orleans, Norfolk, Raleigh, Richmond, Sacramento, San Jose, Tuscon, and Tulsa.

“(ii) DEPLOYMENT AREA.—The term ‘deployment area’ means any of the metropolitan areas of Baltimore, Birmingham, Boston, Chicago, Cleveland, Dallas/Fort Worth, Denver, Detroit, Houston, Indianapolis, Las Vegas, Los Angeles, Miami, New York/Northern New Jersey, Northern Kentucky/Cincinnati, Oklahoma City, Orlando, Philadelphia, Phoenix, Pittsburgh, Portland, Providence, Salt Lake, San Diego, San Francisco, St. Louis, Seattle, Tampa, and Washington, District of Columbia.

“(iii) METROPOLITAN AREA.—The term ‘metropolitan area’, including a major transportation corridor serving a metropolitan area, means any area that—

“(I) has a population exceeding 300,000; and

“(II) meets criteria established by the Secretary in conjunction with the intelligent vehicle highway systems corridors program.

“(iv) ORIGINAL CONTRACT.—The term ‘original contract’ means the Department of Transport-

tation contract numbered DTTS 59-99-D-00445 T020013.

“(v) PROGRAM.—The term ‘program’ means the 2-part intelligent transportation infrastructure program carried out under this paragraph.

“(vi) STATE TRANSPORTATION DEPARTMENT.—The term ‘State transportation department’ means—

“(I) a State transportation department (as defined in section 101 of title 23, United States Code); and

“(II) a designee of a State transportation department (as so defined) for the purpose of entering into contracts.

“(vii) UNCOMMITTED FUNDS.—The term ‘uncommitted funds’ means the total amount of funds that, as of the date that is 180 days after the date of enactment of the SAFETEA-LU [Aug. 10, 2005], remain uncommitted under the original contract.

“(B) INTELLIGENT TRANSPORTATION INFRASTRUCTURE PROGRAM.—

“(i) IN GENERAL.—The Secretary shall carry out a 2-part intelligent transportation infrastructure program in accordance with this paragraph to advance the deployment of an operational intelligent transportation infrastructure system, through measurement of various transportation system activities, to simultaneously—

“(I) aid in transportation planning and analysis; and

“(II) make a significant contribution to the ITS program under this title [see Tables for classification].

“(ii) OBJECTIVES.—The objectives of the program are—

“(I) to build or integrate an infrastructure of the measurement of various transportation system metrics to aid in planning, analysis, and maintenance of the Department of Transportation, including the buildout, maintenance, and operation of greater than 40 metropolitan area systems with a total cost not to exceed \$2,000,000 for each metropolitan area;

“(II) to provide private technology commercialization initiatives to generate revenues that will be reinvested in the intelligent transportation infrastructure system;

“(III) to aggregate data into reports for multipoint data distribution techniques; and

“(IV) with respect to part I of the program under subparagraph (C), to use an advanced information system designed and monitored by an entity with experience with the Department of Transportation in the design and monitoring of high-reliability, mission-critical voice and data systems.

“(C) PART I.—

“(i) IN GENERAL.—In carrying out part I of the program, the Secretary shall permit the entity to which the original contract was awarded to use uncommitted funds to deploy intelligent transportation infrastructure systems that have been accepted by the Secretary—

“(I) in accordance with the terms of the original contract; and

“(II) in any deployment area, with the consent of the State transportation department for the deployment area.

“(ii) APPLICABLE CONDITIONS.—The same asset ownership, maintenance, fixed price contract, and revenue sharing model, and the same competitively selected consortium leader, as were used for the deployment of intelligent transportation infrastructure systems under the original contract before the date of enactment of the SAFETEA-LU [Aug. 10, 2005] shall apply to each deployment carried out under clause (i).

“(iii) DEPLOYMENT IN CONGESTED AREAS.—If the entity referred to in clause (i) is unable to use the uncommitted funds by deploying intelligent transportation infrastructure systems in deploy-

ment areas, as determined by the Secretary, the entity may deploy the systems in accordance with this paragraph in one or more congested areas, with the consent of the State transportation departments for the congested areas.

“(D) PART II.—

“(i) IN GENERAL.—In carrying out part II of the program, the Secretary shall award, on a competitive basis, contracts for the deployment of intelligent transportation infrastructure systems that have been accepted by the Secretary in congested areas, with the consent of the State transportation departments for the congested areas.

“(ii) REQUIREMENTS.—The Secretary shall award contracts under clause (i)—

“(I) for individual congested areas among entities that seek to deploy intelligent transportation infrastructure systems in the congested areas; and

“(II) on the condition that the terms of each contract awarded requires the entity deploying such system to ensure that the deployed system is compatible (as determined by the Secretary) with systems deployed in other congested areas under this paragraph.

“(iii) PROVISIONS IN CONTRACTS.—The Secretary shall require that each contract for the deployment of an intelligent transportation infrastructure system under this subparagraph contain such provisions relating to asset ownership, maintenance, fixed price, and revenue sharing as the Secretary considers to be appropriate.

“(E) USE OF FUNDS FOR UNDEPLOYED SYSTEMS.—

“(i) IN GENERAL.—If, under part I or part II of the program, a State transportation department for a deployment area or congested area does not consent by the later of the date that is 180 days after the date of enactment of the SAFETEA-LU [Aug. 10, 2005], or another date determined jointly by the State transportation department and the deployment area or congested area, to participate in the deployment of an intelligent transportation infrastructure system in the deployment area or congested area, upon application by any other deployment area or congested area that has consented by that date to participate in the deployment of such a system, the Secretary shall distribute any such unused funds to any other deployment or congested area that has consented by that date to participate in the deployment of such a system.

“(ii) NO INCLUSION IN COST LIMITATION.—Costs paid using funds provided through a distribution under clause (i) shall not be considered in determining the limitation on maximum cost described in subparagraph (F)(ii).

“(F) FEDERAL SHARE; LIMITS ON COSTS OF SYSTEMS FOR METROPOLITAN AREAS.—

“(i) FEDERAL SHARE.—Subject to clause (ii), the Federal share of the cost of any project or activity carried out under the program shall be 80 percent.

“(ii) LIMIT ON COSTS OF SYSTEM FOR EACH METROPOLITAN AREA.—

“(I) IN GENERAL.—Not more than \$2,000,000 may be provided under this paragraph for deployment of an intelligent transportation infrastructure system for a metropolitan area.

“(II) FUNDING UNDER EACH PART.—A metropolitan area in which an intelligent transportation infrastructure system is deployed under part I or part II under subparagraphs (C) and (D), respectively, including through a distribution of funds under subparagraph (E), may not receive any additional deployment under the other part of the program.

“(G) USE OF RIGHTS-OF-WAY.—

“(i) IN GENERAL.—An intelligent transportation system project described in this paragraph or paragraph (6) that involves privately owned intel-

ligent transportation system components and is carried out using funds made available from the Highway Trust Fund shall not be subject to any law (including a regulation) of a State or political subdivision of a State prohibiting or regulating commercial activities in the rights-of-way of a highway for which Federal-aid highway funds have been used for planning, design, construction, or maintenance for the project, if the Secretary determines that such use is in the public interest.

“(ii) EFFECT OF SUBPARAGRAPH.—Nothing in this subparagraph affects the authority of a State or political subdivision of a State—

“(I) to regulate highway safety; or

“(II) under sections 253 and 332(c)(7) of the Communications Act of 1934 (47 U.S.C. 253, 332(c)(7)).

“(H) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated such sums as may be necessary for each of fiscal years 2005 through 2009 to carry out this paragraph.

“(4) CORROSION CONTROL AND PREVENTION.—

“(A) IN GENERAL.—The Secretary shall make a grant to conduct a study on the costs and benefits of corrosion control and prevention. The study shall be conducted in conjunction with an interdisciplinary team of experts from the fields of metallurgy, chemistry, economics, and others, as appropriate. Not later than September 30, 2001, the Secretary shall submit to Congress a report on the study results, together with any recommendations.

“(B) FUNDING.—Of the amounts made available for each of fiscal years 1999 and 2000 by section 5001(a)(1) of this Act [112 Stat. 419], \$500,000 per fiscal year shall be available to carry out this paragraph.

“(5) FUNDAMENTAL PROPERTIES OF ASPHALTS AND MODIFIED ASPHALTS.—

“(A) IN GENERAL.—The Secretary shall continue to carry out section 6016 of the Intermodal Surface Transportation Efficiency Act of 1991 [Pub. L. 102-240, formerly set out as a note below]. Additional areas of the program under such section shall be asphalt-water interaction studies and asphalt-aggregate thin film behavior studies.

“(B) FUNDING.—Of the amounts made available for each of fiscal years 1998 through 2003 by section 5001(a)(1) of this Act, \$1,000,000 for fiscal year 1998 and \$3,000,000 for each of fiscal years 1999 through 2003 shall be available to carry out this paragraph.

“(6) ADVANCED TRAFFIC MONITORING AND RESPONSE CENTER.—

“(A) IN GENERAL.—The Secretary shall make grants to the Commonwealth of Pennsylvania, in conjunction with the Pennsylvania Turnpike Commission, to establish an advanced traffic monitoring and emergency response center at Letterkenny Army Depot in Chambersburg, Pennsylvania. The center shall help develop and coordinate traffic monitoring and ITS systems on portions of the Pennsylvania Turnpike system and I-81, coordinate emergency response with State and local governments in the Central Pennsylvania Region and conduct research on emergency response and prototype trauma response.

“(B) FUNDING.—

“(i) ELIGIBILITY UNDER SECTION 5208.—The center established under this paragraph shall be eligible for funding under section 5208 of this Act [set out in a note below].

“(ii) ALLOCATION.—Of the amounts made available for each of fiscal years 1998 through 2003 by section 5001(a)(2) of this Act, \$1,667,000 per fiscal year shall be available to carry out this paragraph.

“(7) TRANSPORTATION ECONOMIC AND LAND USE SYSTEM.—

“(A) IN GENERAL.—The Secretary shall continue development and deployment through the New Jersey Institute of Technology to metropolitan plan-

ning organizations of the Transportation Economic and Land Use System.

“(B) FUNDING.—Of the amounts made available for each of fiscal years 1998 through 2003 by section 5001(a)(2) of this Act, \$1,000,000 per fiscal year shall be available to carry out this paragraph.

“(8) RECYCLED MATERIALS RESOURCE CENTER.—

“(A) ESTABLISHMENT.—The Secretary shall establish at the University of New Hampshire a research program to be known as the ‘Recycled Materials Resource Center’ (referred to in this paragraph as the ‘Center’).

“(B) ACTIVITIES.—

“(i) IN GENERAL.—The Center shall—

“(I) systematically test, evaluate, develop appropriate guidelines for, and demonstrate environmentally acceptable and occupationally safe technologies and techniques for the increased use of traditional and nontraditional recycled and secondary materials in transportation infrastructure construction and maintenance;

“(II) make information available to State transportation departments, the Federal Highway Administration, the construction industry, and other interested parties to assist in evaluating proposals to use traditional and nontraditional recycled and secondary materials in transportation infrastructure construction;

“(III) encourage the increased use of traditional and nontraditional recycled and secondary materials by using sound science to analyze thoroughly all potential long-term considerations that affect the physical and environmental performance of the materials; and

“(IV) work cooperatively with Federal and State officials to reduce the institutional barriers that limit widespread use of traditional and nontraditional recycled and secondary materials and to ensure that such increased use is consistent with the sustained environmental and physical integrity of the infrastructure in which the materials are used.

“(ii) SITES AND PROJECTS UNDER ACTUAL FIELD CONDITIONS.—In carrying out clause (i)(III), the Secretary may authorize the Center to—

“(I) use test sites and demonstration projects under actual field conditions to develop appropriate performance data; and

“(II) develop appropriate tests and guidelines to ensure correct use of recycled and secondary materials in transportation infrastructure construction.

“(C) REVIEW AND EVALUATION.—

“(i) IN GENERAL.—Not less often than every 2 years, the Secretary shall review and evaluate the program carried out by the Center.

“(ii) NOTIFICATION OF DEFICIENCIES.—In carrying out clause (i), if the Secretary determines that the Center is deficient in carrying out subparagraph (B), the Secretary shall notify the Center of each deficiency and recommend specific measures to address the deficiency.

“(iii) DISQUALIFICATION.—If, after the end of the 180-day period that begins on the date of notification to the Center under clause (ii), the Secretary determines that the Center has not corrected each deficiency identified under clause (ii), the Secretary may, after notifying the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives of the determination, disqualify the Center from further participation under this section.

“(D) FUNDING.—Of the amounts made available for each of fiscal years 1998 through 2003 by section 5001(a)(1) of this Act, \$1,500,000 per fiscal year shall be available to carry out this paragraph.”

INTELLIGENT TRANSPORTATION SYSTEMS

Pub. L. 105-178, title V, subtitle C, June 9, 1998, 112 Stat. 452, as amended by Pub. L. 105-206, title IX,

§ 9011(c), July 22, 1998, 112 Stat. 863; Pub. L. 105-277, div. A, § 101(g) [title III, § 370], Oct. 21, 1998, 112 Stat. 2681-439, 2681-478; Pub. L. 109-59, title V, § 5509, Aug. 10, 2005, 119 Stat. 1828; Pub. L. 114-94, div. A, title VI, § 6019(d)(2), Dec. 4, 2015, 129 Stat. 1581, provided that:

“SEC. 5201. SHORT TITLE.

“This subtitle may be cited as the ‘Intelligent Transportation Systems Act of 1998’.

“SEC. 5202. FINDINGS.

“Congress finds that—

“(1) investments authorized by the Intermodal Surface Transportation Efficiency Act of 1991 (105 Stat. 1914 et seq.) [Pub. L. 104-240, see Tables for classification] have demonstrated that intelligent transportation systems can mitigate surface transportation problems in a cost-effective manner; and

“(2) continued investment in architecture and standards development, research, and systems integration is needed to accelerate the rate at which intelligent transportation systems are incorporated into the national surface transportation network, thereby improving transportation safety and efficiency and reducing costs and negative impacts on communities and the environment.

“SEC. 5203. GOALS AND PURPOSES.

“(a) GOALS.—The goals of the intelligent transportation system program include—

“(1) enhancement of surface transportation efficiency and facilitation of intermodalism and international trade to enable existing facilities to meet a significant portion of future transportation needs, including public access to employment, goods, and services, and to reduce regulatory, financial, and other transaction costs to public agencies and system users;

“(2) achievement of national transportation safety goals, including the enhancement of safe operation of motor vehicles and nonmotorized vehicles, with particular emphasis on decreasing the number and severity of collisions;

“(3) protection and enhancement of the natural environment and communities affected by surface transportation, with particular emphasis on assisting State and local governments to achieve national environmental goals;

“(4) accommodation of the needs of all users of surface transportation systems, including operators of commercial vehicles, passenger vehicles, and motorcycles, and including individuals with disabilities; and

“(5) improvement of the Nation’s ability to respond to emergencies and natural disasters and enhancement of national defense mobility.

“(b) PURPOSES.—The Secretary shall implement activities under the intelligent system transportation program to, at a minimum—

“(1) expedite, in both metropolitan and rural areas, deployment and integration of intelligent transportation systems for consumers of passenger and freight transportation;

“(2) ensure that Federal, State, and local transportation officials have adequate knowledge of intelligent transportation systems for full consideration in the transportation planning process;

“(3) improve regional cooperation and operations planning for effective intelligent transportation system deployment;

“(4) promote the innovative use of private resources;

“(5) develop a workforce capable of developing, operating, and maintaining intelligent transportation systems; and

“(6) complete deployment of Commercial Vehicle Information Systems and Networks in a majority of States by September 30, 2003.

“SEC. 5204. GENERAL AUTHORITIES AND REQUIREMENTS.

“(a) SCOPE.—Subject to the provisions of this subtitle, the Secretary shall conduct an ongoing intel-

ligent transportation system program to research, develop, and operationally test intelligent transportation systems and advance nationwide deployment of such systems as a component of the surface transportation systems of the United States.

“(b) POLICY.—Intelligent transportation system operational tests and deployment projects funded pursuant to this subtitle shall encourage and not displace public-private partnerships or private sector investment in such tests and projects.

“(c) COOPERATION WITH GOVERNMENTAL, PRIVATE, AND EDUCATIONAL ENTITIES.—The Secretary shall carry out the intelligent transportation system program in cooperation with State and local governments and other public entities, the United States private sector, the Federal laboratories, and colleges and universities, including historically black colleges and universities and other minority institutions of higher education.

“(d) CONSULTATION WITH FEDERAL OFFICIALS.—In carrying out the intelligent transportation system program, the Secretary, as appropriate, shall consult with the Secretary of Commerce, the Secretary of the Treasury, the Administrator of the Environmental Protection Agency, the Director of the National Science Foundation, and the heads of other Federal departments and agencies.

“(e) TECHNICAL ASSISTANCE, TRAINING, AND INFORMATION.—The Secretary may provide technical assistance, training, and information to State and local governments seeking to implement, operate, maintain, or evaluate intelligent transportation system technologies and services.

“(f) TRANSPORTATION PLANNING.—The Secretary may provide funding to support adequate consideration of transportation system management and operations, including intelligent transportation systems, within metropolitan and statewide transportation planning processes.

“(g) INFORMATION CLEARINGHOUSE.—

“(1) IN GENERAL.—The Secretary shall—

“(A) maintain a repository for technical and safety data collected as a result of federally sponsored projects carried out under this subtitle; and

“(B) on request, make that information (except for proprietary information and data) readily available to all users of the repository at an appropriate cost.

“(2) DELEGATION OF AUTHORITY.—

“(A) IN GENERAL.—The Secretary may delegate the responsibility of the Secretary under this subsection, with continuing oversight by the Secretary, to an appropriate entity not within the Department of Transportation.

“(B) FEDERAL ASSISTANCE.—If the Secretary delegates the responsibility, the entity to which the responsibility is delegated shall be eligible for Federal assistance under this section.

“(h) ADVISORY COMMITTEES.—

“(1) IN GENERAL.—In carrying out this subtitle, the Secretary may use 1 or more advisory committees.

“(2) APPLICABILITY OF FEDERAL ADVISORY COMMITTEE ACT.—Any advisory committee so used shall be subject to the Federal Advisory Committee Act (5 U.S.C. App.).

“(i) PROCUREMENT METHODS.—

“(1) TECHNICAL ASSISTANCE.—The Secretary shall develop appropriate technical assistance and guidance to assist State and local agencies in evaluating and selecting appropriate methods of procurement for intelligent transportation system projects carried out using funds made available from the Highway Trust Fund, including innovative and nontraditional methods such as the Information Technology Omnibus Procurement.

“(2) INTELLIGENT TRANSPORTATION SYSTEM SOFTWARE.—To the maximum extent practicable, contracting officials shall use as a critical evaluation criterion the Software Engineering Institute’s Capability Maturity Model, or another similar recognized standard risk assessment methodology, to reduce the

cost, schedule, and performance risks associated with the development, management, and integration of intelligent transportation system software.

“(j) EVALUATIONS.—

“(1) GUIDELINES AND REQUIREMENTS.—

“(A) IN GENERAL.—The Secretary shall issue guidelines and requirements for the evaluation of operational tests and deployment projects carried out under this subtitle.

“(B) OBJECTIVITY AND INDEPENDENCE.—The guidelines and requirements issued under subparagraph (A) shall include provisions to ensure the objectivity and independence of the evaluator so as to avoid any real or apparent conflict of interest or potential influence on the outcome by parties to any such test or deployment project or by any other formal evaluation carried out under this subtitle.

“(C) FUNDING.—The guidelines and requirements issued under subparagraph (A) shall establish evaluation funding levels based on the size and scope of each test or project that ensure adequate evaluation of the results of the test or project.

“(2) SPECIAL RULE.—Any survey, questionnaire, or interview that the Secretary considers necessary to carry out the evaluation of any test, deployment project, or program assessment activity under this subtitle shall not be subject to chapter 35 of title 44.

“(k) USE OF RIGHTS-OF-WAY.—Intelligent transportation system projects specified in section 5117(b)(3) and 5117(b)(6) [set out above] and involving privately owned intelligent transportation system components that is carried out using funds made available from the Highway Trust Fund shall not be subject to any law or regulation of a State or political subdivision of a State prohibiting or regulating commercial activities in the rights-of-way of a highway for which Federal-aid highway funds have been utilized for planning, design, construction, or maintenance, if the Secretary of Transportation determines that such use is in the public interest. Nothing in this subsection shall affect the authority of a State or political subdivision of a State to regulate highway safety.

“SEC. 5205. NATIONAL ITS PROGRAM PLAN.

“(a) IN GENERAL.—

“(1) UPDATES.—The Secretary shall maintain and update, as necessary, the National ITS Program Plan developed by the Department of Transportation and the Intelligent Transportation Society of America.

“(2) SCOPE.—The National ITS Program Plan shall—

“(A) specify the goals, objectives, and milestones for the research and deployment of intelligent transportation systems in the context of major metropolitan areas, smaller metropolitan and rural areas, and commercial vehicle operations;

“(B) specify how specific programs and projects will achieve the goals, objectives, and milestones referred to in subparagraph (A), including consideration of the 5- and 10-year timeframes for the goals and objectives;

“(C) identify activities that provide for the dynamic development of standards and protocols to promote and ensure interoperability in the implementation of intelligent transportation system technologies, including actions taken to establish critical standards; and

“(D) establish a cooperative process with State and local governments for determining desired surface transportation system performance levels and developing plans for incorporation of specific intelligent transportation system capabilities into surface transportation systems.

“(b) REPORTING.—The plan described in subsection (a) shall be transmitted and updated as part of the transportation research and development strategic plan under section 6503 of title 49, United States Code.

“SEC. 5206. NATIONAL ARCHITECTURE AND STANDARDS.

“(a) IN GENERAL.—

“(1) DEVELOPMENT, IMPLEMENTATION, AND MAINTENANCE.—Consistent with section 12(d) of the National Technology Transfer and Advancement Act of 1995 [Pub. L. 104-113] (15 U.S.C. 272 note; 110 Stat. 783), the Secretary shall develop, implement, and maintain a national architecture and supporting standards and protocols to promote the widespread use and evaluation of intelligent transportation system technology as a component of the surface transportation systems of the United States.

“(2) INTEROPERABILITY AND EFFICIENCY.—To the maximum extent practicable, the national architecture shall promote interoperability among, and efficiency of, intelligent transportation system technologies implemented throughout the United States.

“(3) USE OF STANDARDS DEVELOPMENT ORGANIZATIONS.—In carrying out this section, the Secretary may use the services of such standards development organizations as the Secretary determines to be appropriate.

“(b) REPORT ON CRITICAL STANDARDS.—Not later than June 1, 1999, the Secretary shall submit a report to the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure and the Committee on Science [now Committee on Science, Space, and Technology] of the House of Representatives identifying which standards are critical to ensuring national interoperability or critical to the development of other standards and specifying the status of the development of each standard identified.

“(c) PROVISIONAL STANDARDS.—

“(1) IN GENERAL.—If the Secretary finds that the development or balloting of an intelligent transportation system standard jeopardizes the timely achievement of the objectives identified in subsection (a), the Secretary may establish a provisional standard after consultation with affected parties, and using, to the extent practicable, the work product of appropriate standards development organizations.

“(2) CRITICAL STANDARDS.—If a standard identified as critical in the report under subsection (b) is not adopted and published by the appropriate standards development organization by January 1, 2001, the Secretary shall establish a provisional standard after consultation with affected parties, and using, to the extent practicable, the work product of appropriate standards development organizations.

“(3) PERIOD OF EFFECTIVENESS.—A provisional standard established under paragraph (1) or (2) shall be published in the Federal Register and remain in effect until the appropriate standards development organization adopts and publishes a standard.

“(d) WAIVER OF REQUIREMENT TO ESTABLISH PROVISIONAL STANDARD.—

“(1) IN GENERAL.—The Secretary may waive the requirement under subsection (c)(2) to establish a provisional standard if the Secretary determines that additional time would be productive or that establishment of a provisional standard would be counterproductive to achieving the timely achievement of the objectives identified in subsection (a).

“(2) NOTICE.—The Secretary shall publish in the Federal Register a notice describing each standard for which a waiver of the provisional standard requirement has been granted, the reasons for and effects of granting the waiver, and an estimate as to when the standard is expected to be adopted through a process consistent with section 12(d) of the National Technology Transfer and Advancement Act of 1995 [Pub. L. 104-113] (15 U.S.C. 272 note; 110 Stat. 783).

“(3) WITHDRAWAL OF WAIVER.—At any time the Secretary may withdraw a waiver granted under paragraph (1). Upon such withdrawal, the Secretary shall publish in the Federal Register a notice describing each standard for which a waiver has been withdrawn and the reasons for withdrawing the waiver.

“(e) CONFORMITY WITH NATIONAL ARCHITECTURE.—

“(1) IN GENERAL.—Except as provided in paragraphs (2) and (3), the Secretary shall ensure that intelligent

transportation system projects carried out using funds made available from the Highway Trust Fund, including funds made available under this subtitle to deploy intelligent transportation system technologies, conform to the national architecture, applicable standards or provisional standards, and protocols developed under subsection (a).

“(2) SECRETARY’S DISCRETION.—The Secretary may authorize exceptions to paragraph (1) for—

“(A) projects designed to achieve specific research objectives outlined in the National ITS Program Plan under section 5205 or the transportation research and development strategic plan under section 6503 of title 49, United States Code; or

“(B) the upgrade or expansion of an intelligent transportation system in existence on the date of enactment of this subtitle [June 9, 1998], if the Secretary determines that the upgrade or expansion—

“(i) would not adversely affect the goals or purposes of this subtitle;

“(ii) is carried out before the end of the useful life of such system; and

“(iii) is cost-effective as compared to alternatives that would meet the conformity requirement of paragraph (1).

“(3) EXCEPTIONS.—Paragraph (1) shall not apply to funds used for operation or maintenance of an intelligent transportation system in existence on the date of enactment of this subtitle.

“(f) SPECTRUM.—The Federal Communications Commission shall consider, in consultation with the Secretary, spectrum needs for the operation of intelligent transportation systems, including spectrum for the dedicated short-range vehicle-to-wayside wireless standard. Not later than January 1, 2000, the Federal Communications Commission shall have completed a rulemaking considering the allocation of spectrum for intelligent transportation systems.

“SEC. 5207. RESEARCH AND DEVELOPMENT.

“(a) IN GENERAL.—The Secretary shall carry out a comprehensive program of intelligent transportation system research, development and operational tests of intelligent vehicles and intelligent infrastructure systems, and other similar activities that are necessary to carry out this subtitle.

“(b) PRIORITY AREAS.—Under the program, the Secretary shall give higher priority to funding projects that—

“(1) address traffic management, incident management, transit management, toll collection, traveler information, or highway operations systems;

“(2) focus on crash-avoidance and integration of in-vehicle crash protection technologies with other on-board safety systems, including the interaction of air bags and safety belts;

“(3) incorporate human factors research, including the science of the driving process;

“(4) facilitate the integration of intelligent infrastructure, vehicle, and control technologies, including magnetic guidance control systems or other materials or magnetics research; or

“(5) incorporate research on the impact of environmental, weather, and natural conditions on intelligent transportation systems, including the effects of cold climates.

“(c) OPERATIONAL TESTS.—Operational tests conducted under this section shall be designed for the collection of data to permit objective evaluation of the results of the tests, derivation of cost-benefit information that is useful to others contemplating deployment of similar systems, and development and implementation of standards.

“(d) FEDERAL SHARE.—The Federal share of the cost of operational tests and demonstrations under subsection (a) shall not exceed 80 percent.

“[SECS. 5208, 5209. Repealed. Pub. L. 109–59, title V, § 5509, Aug. 10, 2005, 119 Stat. 1828.]

“SEC. 5210. USE OF FUNDS.

“(a) OUTREACH AND PUBLIC RELATIONS LIMITATION.—

“(1) IN GENERAL.—For each fiscal year, not more than \$5,000,000 of the funds made available to carry out this subtitle shall be used for intelligent transportation system outreach, public relations, displays, scholarships, tours, and brochures.

“(2) APPLICABILITY.—Paragraph (1) shall not apply to intelligent transportation system training or the publication or distribution of research findings, technical guidance, or similar documents.

“(b) INFRASTRUCTURE DEVELOPMENT.—Funds made available to carry out this subtitle for operational tests and deployment projects—

“(1) shall be used primarily for the development of intelligent transportation system infrastructure; and

“(2) to the maximum extent practicable, shall not be used for the construction of physical highway and transit infrastructure unless the construction is incidental and critically necessary to the implementation of an intelligent transportation system project.

“(c) LIFE CYCLE COST ANALYSIS AND FINANCING AND OPERATIONS PLAN.—The Secretary shall require an applicant for funds made available under sections 5208 and 5209 to submit to the Secretary—

“(1) an analysis of the life-cycle costs of operation and maintenance of intelligent transportation system elements, if the total initial capital costs of the elements exceed \$3,000,000; and

“(2) a multiyear financing and operations plan that describes how the project will be cost-effectively operated and maintained.

“(d) USE OF INNOVATIVE FINANCING.—

“(1) IN GENERAL.—The Secretary may use up to 25 percent of the funds made available to carry out this subtitle to make available loans, lines of credit, and loan guarantees for projects that are eligible for assistance under this subtitle and that have significant intelligent transportation system elements.

“(2) CONSISTENCY WITH OTHER LAW.—Credit assistance described in paragraph (1) shall be made available in a manner consistent with the Transportation Infrastructure Finance and Innovation Act of 1998 [see section 1501 of Pub. L. 105–178, set out as a Short Title of 1998 Amendment note under section 101 of this title].

“SEC. 5211. DEFINITIONS.

“In this subtitle, the following definitions apply:

“(1) COMMERCIAL VEHICLE INFORMATION SYSTEMS AND NETWORKS.—The term ‘Commercial Vehicle Information Systems and Networks’ means the information systems and communications networks that support commercial vehicle operations.

“(2) COMMERCIAL VEHICLE OPERATIONS.—The term ‘commercial vehicle operations’—

“(A) means motor carrier operations and motor vehicle regulatory activities associated with the commercial movement of goods, including hazardous materials, and passengers; and

“(B) with respect to the public sector, includes the issuance of operating credentials, the administration of motor vehicle and fuel taxes, and roadside safety and border crossing inspection and regulatory compliance operations.

“(3) CORRIDOR.—The term ‘corridor’ means any major transportation route that includes parallel limited access highways, major arterials, or transit lines.

“(4) INTELLIGENT TRANSPORTATION INFRASTRUCTURE.—The term ‘intelligent transportation infrastructure’ means fully integrated public sector intelligent transportation system components, as defined by the Secretary.

“(5) INTELLIGENT TRANSPORTATION SYSTEM.—The term ‘intelligent transportation system’ means electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

“(6) NATIONAL ARCHITECTURE.—The term ‘national architecture’ means the common framework for interoperability adopted by the Secretary that defines—

“(A) the functions associated with intelligent transportation system user services;

“(B) the physical entities or subsystems within which the functions reside;

“(C) the data interfaces and information flows between physical subsystems; and

“(D) the communications requirements associated with the information flows.

“(7) STANDARD.—The term ‘standard’ means a document that—

“(A) contains technical specifications or other precise criteria for intelligent transportation systems that are to be used consistently as rules, guidelines, or definitions of characteristics so as to ensure that materials, products, processes, and services are fit for their purposes; and

“(B) may support the national architecture and promote—

“(i) the widespread use and adoption of intelligent transportation system technology as a component of the surface transportation systems of the United States; and

“(ii) interoperability among intelligent transportation system technologies implemented throughout the States.

“(8) STATE.—The term ‘State’ has the meaning given the term under section 101 of title 23, United States Code.

“SEC. 5212. PROJECT FUNDING.

“(a) USE OF HAZARDOUS MATERIALS MONITORING SYSTEMS.—

“(1) IN GENERAL.—The Secretary shall conduct research on improved methods of deploying and integrating existing ITS projects to include hazardous materials monitoring systems across various modes of transportation.

“(2) FUNDING.—Of the amounts made available for each of fiscal years 1998 through 2003 by section 5001(a)(6) of this Act [112 Stat. 420], \$1,500,000 per fiscal year shall be available to carry out this paragraph.

“(b) OUTREACH AND TECHNOLOGY TRANSFER ACTIVITIES.—

“(1) IN GENERAL.—The Secretary shall continue to support the Urban Consortium’s ITS outreach and technology transfer activities.

“(2) FUNDING.—Of the amounts made available for each of fiscal years 1998 through 2003 by section 5001(a)(5) of this Act [112 Stat. 420], \$500,000 per fiscal year shall be available to carry out this paragraph.

“(c) TRANSLINK.—

“(1) IN GENERAL.—The Secretary shall make grants to the Texas Transportation Institute to continue the Translink Research program.

“(2) FUNDING.—Of the amounts allocated for each of fiscal years 1999 through 2001 by section 5001(a)(6) of this Act, \$1,300,000 per fiscal year shall be available to carry out this paragraph.

“SEC. 5213. REPEAL.

“The Intermodal Surface Transportation Efficiency Act of 1991 [Pub. L. 102-240] is amended by striking part B [§§ 6051-6059] of title VI (23 U.S.C. 307 note; 105 Stat. 2189).”

[Pub. L. 109-59, title V, §5509, Aug. 10, 2005, 119 Stat. 1828, provided that the amendment made by section 5509, repealing sections 5208 and 5209 of Pub. L. 105-178, set out above, is effective Oct. 1 2005.]

RESEARCH ADVISORY COMMITTEE

Pub. L. 102-240, title VI, §6011, Dec. 18, 1991, 105 Stat. 2179, provided that:

“(a) ESTABLISHMENT.—Not later than 180 days after the date of transmittal of the report to Congress under section 6010 [of Pub. L. 102-240, formerly set out as a note under section 307 of this title], the Secretary shall establish an independent surface transportation research advisory committee (hereinafter in this section referred to as the ‘advisory committee’).

“(b) PURPOSES.—The advisory committee shall provide ongoing advice and recommendations to the Secretary regarding needs, objectives, plans, approaches, content, and accomplishments with respect to short-term and long-term surface transportation research and development. The advisory committee shall also assist in ensuring that such research and development is coordinated with similar research and development being conducted outside of the Department of Transportation.

“(c) MEMBERSHIP.—The advisory committee shall be composed of not less than 20 and not more than 30 members appointed by the Secretary from among individuals who are not employees of the Department of Transportation and who are specially qualified to serve on the advisory committee by virtue of their education, training, or experience. A majority of the members of the advisory committee shall be individuals with experience in conducting surface transportation research and development. The Secretary in appointing the members of the advisory committee shall ensure that representatives of Federal, State, and local governments, other public agencies, colleges and universities, public, private, and nonprofit research organizations, and organizations representing transportation providers, shippers, labor, and the financial community are represented on an equitable basis.

“(d) CHAIRMAN.—The chairman of the advisory committee shall be designated by the Secretary.

“(e) PAY AND EXPENSES.—Members of the advisory committee shall serve without pay, except that the Secretary may allow any member, while engaged in the business of the advisory committee or a subordinate committee, travel expenses, including per diem in lieu of subsistence, in accordance with sections 5702 and 5703 of title 5, United States Code.

“(f) SUBORDINATE COMMITTEES.—The Secretary shall establish a subordinate committee to the advisory committee to provide advice on advanced highway vehicle technology research and development, and may establish other subordinate committees to provide advice on specific areas of surface transportation research and development. Such subordinate committees shall be subject to subsections (e), (g), and (i) of this section.

“(g) ASSISTANCE OF SECRETARY.—Upon request of the advisory committee, the Secretary shall provide such information, administrative services, support staff, and supplies as the Secretary determines to be necessary for the advisory committee to carry out its functions.

“(h) REPORTS.—The advisory committee shall, within 1 year after the date of establishment of the advisory committee, and annually thereafter, submit to the Congress a report summarizing its activities under this section.

“(i) TERMINATION.—Section 14 of the Federal Advisory Committee Act [5 U.S.C. App.] shall not apply to the advisory committee established under this section.”

FUNDAMENTAL PROPERTIES OF ASPHALTS AND MODIFIED ASPHALTS

Pub. L. 102-240, title VI, §6016, Dec. 18, 1991, 105 Stat. 2182, as amended by Pub. L. 114-94, div. A, title I, §1419(a), Dec. 4, 2015, 129 Stat. 1423, required the Administrator of the Federal Highway Administration to conduct studies of the fundamental chemical and physical properties of petroleum asphalts and modified asphalts used in highway construction in the United States and to submit reports on the progress of the studies and authorized appropriations for fiscal years 1992 to 1996.

STUDY OF FACTORS AFFECTING SAFE AND EFFICIENT OPERATION OF BRIDGES, TUNNELS AND ROADS WITHIN UNITED STATES

Pub. L. 95-599, title I, §166, Nov. 6, 1978, 92 Stat. 2722, provided that: “The Secretary of Transportation shall make a full and complete investigation and study of all those factors affecting the safe and efficient operation of bridges, tunnels, and roads within the United States,

including, but not limited to, structural, operational, environmental, and civil disturbance factors.”

§ 503. Research and technology development and deployment

(a) IN GENERAL.—The Secretary shall—

(1) carry out research, development, and deployment activities that encompass the entire innovation lifecycle; and

(2) ensure that all research carried out under this section aligns with the transportation research and development strategic plan of the Secretary under section 508.¹

(b) HIGHWAY RESEARCH AND DEVELOPMENT PROGRAM.—

(1) OBJECTIVES.—In carrying out the highway research and development program, the Secretary, to address current and emerging highway transportation needs, shall—

(A) identify research topics;

(B) coordinate research and development activities;

(C) carry out research, testing, and evaluation activities; and

(D) provide technology transfer and technical assistance.

(2) IMPROVING HIGHWAY SAFETY.—

(A) IN GENERAL.—The Secretary shall carry out research and development activities from an integrated perspective to establish and implement systematic measures to improve highway safety.

(B) OBJECTIVES.—In carrying out this paragraph, the Secretary shall carry out research and development activities—

(i) to achieve greater long-term safety gains;

(ii) to reduce the number of fatalities and serious injuries on public roads;

(iii) to fill knowledge gaps that limit the effectiveness of research;

(iv) to support the development and implementation of State strategic highway safety plans;

(v) to advance improvements in, and use of, performance prediction analysis for decisionmaking; and

(vi) to expand technology transfer to partners and stakeholders.

(C) CONTENTS.—Research and technology activities carried out under this paragraph may include—

(i) safety assessments and decision-making tools;

(ii) data collection and analysis;

(iii) crash reduction projections;

(iv) low-cost safety countermeasures;

(v) innovative operational improvements and designs of roadway and roadside features;

(vi) evaluation of countermeasure costs and benefits;

(vii) development of tools for projecting impacts of safety countermeasures;

(viii) rural road safety measures;

(ix) safety measures for vulnerable road users, including bicyclists and pedestrians;

(x) safety policy studies;

(xi) human factors studies and measures;

(xii) safety technology deployment;

(xiii) safety workforce professional capacity building initiatives;

(xiv) safety program and process improvements; and

(xv) tools and methods to enhance safety performance, including achievement of statewide safety performance targets.

(3) IMPROVING INFRASTRUCTURE INTEGRITY.—

(A) IN GENERAL.—The Secretary shall carry out and facilitate highway and bridge infrastructure research and development activities—

(i) to maintain infrastructure integrity;

(ii) to meet user needs; and

(iii) to link Federal transportation investments to improvements in system performance.

(B) OBJECTIVES.—In carrying out this paragraph, the Secretary shall carry out research and development activities—

(i) to reduce the number of fatalities attributable to infrastructure design characteristics and work zones;

(ii) to improve the safety and security of highway infrastructure;

(iii) to increase the reliability of lifecycle performance predictions used in infrastructure design, construction, and management;

(iv) to improve the ability of transportation agencies to deliver projects that meet expectations for timeliness, quality, and cost;

(v) to reduce user delay attributable to infrastructure system performance, maintenance, rehabilitation, and construction;

(vi) to improve highway condition and performance through increased use of design, materials, construction, and maintenance innovations;

(vii) to reduce the environmental impacts of highway infrastructure through innovations in design, construction, operation, preservation, and maintenance; and

(viii) to study vulnerabilities of the transportation system to seismic activities and extreme events and methods to reduce those vulnerabilities.

(C) CONTENTS.—Research and technology activities carried out under this paragraph may include—

(i) long-term infrastructure performance programs addressing pavements, bridges, tunnels, and other structures;

(ii) short-term and accelerated studies of infrastructure performance;

(iii) research to develop more durable infrastructure materials and systems;

(iv) advanced infrastructure design methods;

(v) accelerated highway and bridge construction;

(vi) performance-based specifications;

(vii) construction and materials quality assurance;

(viii) comprehensive and integrated infrastructure asset management;

¹ See References in Text note below.