

108TH CONGRESS  
1ST SESSION

# H. R. 3577

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

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## IN THE HOUSE OF REPRESENTATIVES

NOVEMBER 21, 2003

Mr. EHLERS introduced the following bill; which was referred to the Committee on Science

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## A BILL

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

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

3 **SECTION 1. TABLE OF CONTENTS.**

4 The table of contents for this Act is as follows:

Sec. 1. Table of contents.

Sec. 2. Findings.

### TITLE I—SURFACE TRANSPORTATION RESEARCH

Sec. 101. Authorization of appropriations.

Sec. 102. Goals, principles, and processes.

Sec. 103. Transportation research and development strategic planning and annual reporting.

Sec. 104. Surface transportation research and development.

Sec. 105. Technology deployment.

Sec. 106. Future Strategic Highway Research Program.

Sec. 107. University Transportation Centers.  
 Sec. 108. Intelligent Transportation systems.  
 Sec. 109. National Multimodal Trends Research Program.

TITLE II—MISCELLANEOUS

Sec. 201. Authorization of appropriations.  
 Sec. 202. Transit research.  
 Sec. 203. Transportation, energy, and environment.  
 Sec. 204. National Cooperative Freight Transportation Research Program.

1 **SEC. 2. FINDINGS.**

2 The Congress finds the following:

3 (1) Research and development is critical to de-  
 4 veloping and maintaining a transportation system  
 5 that meets the goals of safety, mobility, economic vi-  
 6 tality, efficiency, equity, and environmental protec-  
 7 tion.

8 (2) Federally sponsored surface transportation  
 9 research and development has produced many suc-  
 10 cesses. The development of rumble strips has in-  
 11 creased safety; research on materials has increased  
 12 the lifespan of pavements, saving money and reduc-  
 13 ing the disruption caused by construction; and Geo-  
 14 graphic Information Systems have improved the  
 15 management and efficiency of transit fleets.

16 (3) Despite these important successes, the Fed-  
 17 eral surface transportation research and develop-  
 18 ment investment represents only about 0.5 percent  
 19 of overall government spending on surface transpor-  
 20 tation.

1           (4) While Congress increased funding for over-  
2           all transportation programs by about 40 percent in  
3           the Transportation Equity Act for the 21st Century,  
4           funding for transportation research and development  
5           remained relatively flat.

6           (5) The Federal investment in research and de-  
7           velopment should be balanced between short-term  
8           applied and long-term fundamental research and de-  
9           velopment. The investment should also cover a wide  
10          range of research areas, including research on mate-  
11          rials and construction, research on operations, re-  
12          search on transportation trends and human factors,  
13          and research addressing the institutional barriers to  
14          deployment of new technologies.

15          (6) Therefore, Congress finds that it is in the  
16          United States interest to increase the Federal in-  
17          vestment in transportation research and develop-  
18          ment, and to conduct research in critical research  
19          gaps, in order to ensure that the transportation sys-  
20          tem meets the goals of safety, mobility, economic vi-  
21          tality, efficiency, equity, and environmental protec-  
22          tion.

1                   **TITLE I—SURFACE**  
2                   **TRANSPORTATION RESEARCH**

3   **SEC. 101. AUTHORIZATION OF APPROPRIATIONS.**

4           (a) IN GENERAL.—

5                   (1) SURFACE TRANSPORTATION RESEARCH, DE-  
6                   VELOPMENT, AND DEPLOYMENT.—To carry out sec-  
7                   tions 502, 503, 506, 507, and 509 of title 23,  
8                   United States Code, and section 109 of this Act, re-  
9                   lating to research and development, there are au-  
10                  thorized to be appropriated to the Secretary of  
11                  Transportation the following:

12                           (A) \$228,000,000 for fiscal year 2004, of  
13                   which—

14                                   (i) \$15,000,000 shall be set aside to  
15                                   carry out the Surface Transportation Envi-  
16                                   ronment and Planning Cooperative Re-  
17                                   search Program under section 507 of title  
18                                   23, United States Code;

19                                   (ii) \$7,000,000 shall be set aside to  
20                                   carry out advanced exploratory research  
21                                   under section 502(d) of title 23, United  
22                                   States Code; and

23                                   (iii) \$5,000,000 shall be set aside to  
24                                   carry out the National Multimodal Trends

1           Research Program under section 109 of this  
2           Act.

3           (B) \$272,000,000 for fiscal year 2005, of  
4           which—

5                   (i) \$15,000,000 shall be set aside to  
6                   carry out the Surface Transportation Envi-  
7                   ronment and Planning Cooperative Re-  
8                   search Program under section 507 of title  
9                   23, United States Code;

10                   (ii) \$10,000,000 shall be set aside to  
11                   carry out research under section 502(d) of  
12                   title 23, United States Code; and

13                   (iii) \$5,000,000 shall be set aside to  
14                   carry out research under section 109 of  
15                   this Act.

16           (C) \$316,000,000 for fiscal year 2006, of  
17           which—

18                   (i) \$20,000,000 shall be set aside to  
19                   carry out the Surface Transportation Envi-  
20                   ronment and Planning Cooperative Re-  
21                   search Program under section 507 of title  
22                   23, United States Code;

23                   (ii) \$15,000,000 shall be set aside to  
24                   carry out research under section 502(d) of  
25                   title 23, United States Code; and

1 (iii) \$5,000,000 shall be set aside to  
2 carry out research under section 109 of  
3 this Act.

4 (D) \$367,000,000 for fiscal year 2007, of  
5 which—

6 (i) \$20,000,000 shall be set aside to  
7 carry out the Surface Transportation Envi-  
8 ronment and Planning Cooperative Re-  
9 search Program under section 507 of title  
10 23, United States Code;

11 (ii) \$15,000,000 shall be set aside to  
12 carry out research under section 502(d) of  
13 title 23, United States Code; and

14 (iii) \$5,000,000 shall be set aside to  
15 carry out research under section 109 of  
16 this Act.

17 (E) \$423,000,000 for fiscal year 2008, of  
18 which—

19 (i) \$30,000,000 shall be set aside to  
20 carry out the Surface Transportation Envi-  
21 ronment and Planning Cooperative Re-  
22 search Program under section 507 of title  
23 23, United States Code;

1 (ii) \$15,000,000 shall be set aside to  
2 carry out research under section 502(d) of  
3 title 23, United States Code; and

4 (iii) \$5,000,000 shall be set aside to  
5 carry out research under section 109 of  
6 this Act.

7 (F) \$490,000,000 for fiscal year 2009, of  
8 which—

9 (i) \$30,000,000 shall be set aside to  
10 carry out the Surface Transportation Envi-  
11 ronment and Planning Cooperative Re-  
12 search Program under section 507 of title  
13 23, United States Code;

14 (ii) \$15,000,000 shall be set aside to  
15 carry out research under section 502(d) of  
16 title 23, United States Code; and

17 (iii) \$5,000,000 shall be set aside to  
18 carry out research under section 109 of  
19 this Act.

20 (2) UNIVERSITY TRANSPORTATION RE-  
21 SEARCH.—For carrying out section 5505 of title 49,  
22 United States Code, there are authorized to be ap-  
23 propriated to the Secretary of Transportation the  
24 following:

25 (A) \$56,000,000 for fiscal year 2004.

1 (B) \$66,000,000 for fiscal year 2005.

2 (C) \$76,000,000 for fiscal year 2006.

3 (D) \$90,000,000 for fiscal year 2007.

4 (E) \$90,000,000 for fiscal year 2008.

5 (F) \$90,000,000 for fiscal year 2009.

6 (3) INTELLIGENT TRANSPORTATION SYSTEMS  
7 RESEARCH.—For carrying out the Intelligent Trans-  
8 portation Systems Act of 2003, there are authorized  
9 to be appropriated to the Secretary of Transpor-  
10 tation the following:

11 (A) \$130,000,000 for fiscal year 2004.

12 (B) \$135,000,000 for fiscal year 2005.

13 (C) \$140,000,000 for fiscal year 2006.

14 (D) \$140,000,000 for fiscal year 2007.

15 (E) \$145,000,000 for fiscal year 2008.

16 (F) \$145,000,000 for fiscal year 2009.

17 (b) COLLABORATIVE RESEARCH AND DEVELOP-  
18 MENT.—Section 502(b) of title 23, United States Code,  
19 is amended—

20 (1) by striking paragraph (3); and

21 (2) by redesignating paragraphs (4) and (5) as  
22 paragraphs (3) and (4), respectively.

23 **SEC. 102. GOALS, PRINCIPLES, AND PROCESSES.**

24 (a) GOALS.—The Federal Government shall support  
25 surface transportation research in order to support the

1 goals established for the surface transportation system as  
2 set forth in the Transportation Equity Act for the 21st  
3 Century, including supporting economic vitality, improving  
4 safety and security, increasing mobility, protecting and en-  
5 hancing the environment, improving integration between  
6 modes of transportation, promoting efficiency, and empha-  
7 sizing the preservation of the existing transportation sys-  
8 tem.

9 (b) BASIC PRINCIPLES GOVERNING RESEARCH AND  
10 DEVELOPMENT.—

11 (1) FEDERAL RESPONSIBILITY.—Funding and  
12 conducting surface transportation research and de-  
13 velopment and technology transfer activities shall be  
14 the responsibility of the Federal Government when—

15 (A) the work is of national significance;

16 (B) it supports research in which there is  
17 a clear public benefit, and private sector invest-  
18 ment is less than optimal due to market failure;

19 (C) it supports critical research that is not  
20 otherwise being conducted by the public or pri-  
21 vate sector;

22 (D) it supports a Federal stewardship role  
23 in ensuring that State and local governments  
24 use national resources efficiently; or

1 (E) it presents the best means to support  
2 Federal policy goals compared to other policy  
3 alternatives.

4 (2) ROLE.—Consistent with these Federal re-  
5 sponsibilities, the Secretary of Transportation  
6 shall—

7 (A) conduct research;

8 (B) support and facilitate research and de-  
9 velopment and technology transfer activities by  
10 State highway agencies, metropolitan planning  
11 organizations, and local governments;

12 (C) share results of completed research;  
13 and

14 (D) support and facilitate technology and  
15 innovation deployment.

16 (3) PROGRAM CONTENT.—The surface trans-  
17 portation research and development program shall  
18 include—

19 (A) fundamental, long-term research;

20 (B) research aimed at significant research  
21 gaps, and emerging issues with national impli-  
22 cations; and

23 (C) research related to policy and plan-  
24 ning.

25 (c) PROCESSES.—

1           (1) STAKEHOLDER INPUT.—Federally spon-  
2           sored surface transportation research and develop-  
3           ment activities shall address the needs of partners  
4           and stakeholders. Stakeholders include users of re-  
5           search (such as States, metropolitan planning orga-  
6           nizations, local governments, and the private sector),  
7           researchers, research sponsors, and other affected  
8           parties, including public interest groups. Stake-  
9           holders shall be included at every level of research  
10          including strategic planning, agenda setting, and  
11          program evaluation. The Secretary shall expand the  
12          range and diversity of stakeholders engaged in the  
13          process.

14          (2) COMPETITION AND PEER REVIEW.—All par-  
15          ties entering into contracts or cooperative agree-  
16          ments with the Secretary, or receiving grants, to  
17          perform research and development activities or pro-  
18          vide technical assistance under this Act shall be se-  
19          lected on a competitive basis, and on the basis of the  
20          results of peer review of proposals submitted to the  
21          Secretary.

22          (3) PERFORMANCE REVIEW AND EVALUA-  
23          TION.—All surface transportation research and de-  
24          velopment projects shall include a component of per-  
25          formance measurement and evaluation. Performance

1 measures shall be established during the proposal  
2 stage of a research project and shall, to the maximum  
3 extent possible, be outcome-based. All evaluations  
4 shall be made readily available to the public.  
5 The results of all surface transportation research  
6 and development funded under this Act shall be peer  
7 reviewed.

8 **SEC. 103. TRANSPORTATION RESEARCH AND DEVELOP-**  
9 **MENT STRATEGIC PLANNING AND ANNUAL**  
10 **REPORTING.**

11 (a) AMENDMENT.—Section 508 of title 23, United  
12 States Code, is amended to read as follows:

13 **“§ 508. Transportation research and development**  
14 **strategic planning and annual reporting**

15 “(a) IN GENERAL.—The Secretary shall—

16 “(1) establish a strategic planning process, consistent  
17 with section 306 of title 5 for the Department of  
18 Transportation to determine national transportation  
19 research and development priorities;

20 “(2) set national transportation strategic goals  
21 and research and development priorities;

22 “(3) coordinate Federal transportation research  
23 and development activities;

1           “(4) measure the results of those activities and  
2           how they impact the performance of the transpor-  
3           tation systems of the United States; and

4           “(5) ensure that planning and reporting activi-  
5           ties carried out under this section are coordinated  
6           with all other transportation planning and reporting  
7           requirements.

8           “(b) IMPLEMENTATION.—The Secretary shall—

9           “(1) provide for the integrated planning, coordi-  
10          nation, and consultation among the operating ad-  
11          ministrations of the Department of Transportation,  
12          including the aviation, transit, and rail operating ad-  
13          ministrations, all other Federal agencies with re-  
14          sponsibility for surface transportation research and  
15          technology development, State and local govern-  
16          ments, institutions of higher education, industry,  
17          and other private and public sector organizations en-  
18          gaged in surface transportation-related research and  
19          development activities;

20          “(2) ensure that the transportation research  
21          and development programs of the Department do  
22          not duplicate other Federal, State, or private sector  
23          research and development programs; and

24          “(3) provide for independent validation of the  
25          scientific and technical assumptions underlying the

1 transportation research and development programs  
2 of the Department.

3 “(c) TRANSPORTATION RESEARCH AND DEVELOP-  
4 MENT STRATEGIC PLAN.—

5 “(1) DEVELOPMENT.—Not later than 1 year  
6 after the date of enactment of this paragraph, the  
7 Secretary shall develop an integrated transportation  
8 research and development strategic plan. The Sec-  
9 retary shall periodically revise such plan.

10 “(2) CONTENTS.—The plan shall—

11 “(A) include the general goals and prin-  
12 ciples of the Department of Transportation for  
13 transportation research and development pro-  
14 gram set forth in section 102 of the Act that  
15 enacted this subparagraph;

16 “(B) define the roles of the Department  
17 and other Federal agencies in achieving the  
18 goals and principles identified under subpara-  
19 graph (A), in order to avoid unnecessary dupli-  
20 cation of effort;

21 “(C) define the Department’s overall strat-  
22 egy and research and development priorities,  
23 and for each research area specified in section  
24 502, set out—

25 “(i) specific research strategies;

1 “(ii) research objectives and priorities;

2 “(iii) projects to be carried out;

3 “(iv) recommended technology trans-  
4 fer activities to promote the deployment of  
5 research results; and

6 “(v) short-term, medium-term, and  
7 long-term technology development and de-  
8 ployment activities;

9 “(D) define the role of each of the oper-  
10 ating administrations of the Department in car-  
11 rying out the plan over the next 5 years, includ-  
12 ing a description of procedures for coordination  
13 of the efforts of the Secretary with the efforts  
14 of the operating administrations of the Depart-  
15 ment and other Federal agencies;

16 “(E) assess how State and local research  
17 and development activities are contributing to  
18 the achievement of the goals identified under  
19 subparagraph (A) and priorities identified  
20 under subparagraph (C);

21 “(F) provide details of the transportation  
22 research and development programs of the De-  
23 partment, including performance goals, re-  
24 sources needed to achieve those goals, and per-  
25 formance indicators as described in section

1 1115(a) of title 31 for the next 5 years for each  
2 area of research and development;

3 “(G) incorporate input from a wide range  
4 of interests in the transportation community,  
5 including State transportation officials, metro-  
6 politan planning organizations, local govern-  
7 ments, business, environmental and community  
8 organizations, academia, and other relevant  
9 Federal agencies, and summarize significant  
10 comments on the plan obtained from these in-  
11 terests; and

12 “(H) incorporate the input of the National  
13 Academy of Sciences and include responses to  
14 significant comments obtained from the Acad-  
15 emy and other advisory bodies, and describe  
16 any corrective actions taken pursuant to such  
17 comments.

18 “(3) NATIONAL ACADEMY OF SCIENCES RE-  
19 VIEW.—The Secretary shall enter into an agreement  
20 for the review by the National Academy of Sciences  
21 of the details of each—

22 “(A) strategic plan or revision required  
23 under section 306 of title 5;

24 “(B) performance plan required under sec-  
25 tion 1115 of title 31; and

1           “(C) program performance report required  
2           under section 1116 of title 31,  
3           with respect to transportation research and develop-  
4           ment.

5           “(4) PERFORMANCE PLANS AND REPORTS.—In  
6           reports submitted under sections 1115 and 1116 of  
7           title 31, the Secretary shall include—

8           “(A) a summary of the results for the pre-  
9           vious fiscal year of transportation research and  
10          development programs to which the Department  
11          of Transportation contributes, along with—

12           “(i) an analysis of the relationship be-  
13          tween those results and the goals identified  
14          under paragraph (2)(A); and

15           “(ii) a description of the methodology  
16          used for assessing the results; and

17          “(B) a description of significant transpor-  
18          tation research and development initiatives, if  
19          any, undertaken during the previous fiscal year  
20          that were not in the plan developed under para-  
21          graph (1), and any significant changes in the  
22          plan from the previous year’s plan.

23          “(d) MERIT REVIEW AND PERFORMANCE MEASURE-  
24          MENT.—Not later than 1 year after the date of enactment  
25          of this subsection, the Secretary shall transmit to Con-

1 gress a report describing competitive merit review proce-  
2 dures for use in selecting grantees and contractors in the  
3 programs covered by the plan developed under subsection  
4 (c) and performance measurement procedures for evalu-  
5 ating the programs.

6 “(e) PROCUREMENT PROCEDURES.—The Secretary  
7 shall—

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

10 “(2) develop model transactions for carrying  
11 out and coordinating Federal and State transpor-  
12 tation research and development activities.

13 “(f) ANNUAL PROJECT REPORTS.—The Secretary  
14 shall publish and make publicly available an annual report  
15 documenting all transportation research and development  
16 activities of the Department. The report shall include de-  
17 tailed accounting of how Federal funds were expended.

18 “(g) CONSISTENCY WITH GOVERNMENT PERFORM-  
19 ANCE AND RESULTS ACT OF 1993.—The plans and re-  
20 ports developed under this section shall be consistent with  
21 and incorporated as part of the plans developed under sec-  
22 tion 306 of title 5 and sections 1115 and 1116 of title  
23 31.”.

24 (b) CONFORMING AMENDMENT.—The analysis for  
25 chapter 5 of title 23, United States Code, is amended by

1 striking the item related to section 508 and inserting the  
2 following:

“508. Transportation research and development strategic planning and annual reporting.”.

3 **SEC. 104. SURFACE TRANSPORTATION RESEARCH AND DE-**  
4 **VELOPMENT.**

5 (a) SURFACE TRANSPORTATION RESEARCH AND DE-  
6 VELOPMENT.—Section 502 of title 23, United States  
7 Code, is amended—

8 (1) in subsection (a)—

9 (A) by striking subparagraphs (B) and (C)  
10 of paragraph (1) and inserting the following:

11 “(B) all phases of transportation planning  
12 and development (including construction, trans-  
13 portation system management and operation,  
14 modernization, development, design, mainte-  
15 nance, safety, data collection, performance anal-  
16 ysis, multimodal assessment, financing, demand  
17 forecasting, and traffic conditions);

18 “(C) institutional arrangements and sup-  
19 port; and

20 “(D) the effect of State laws on the activi-  
21 ties described in subparagraphs (A), (B), and  
22 (C).”; and

1 (B) in paragraph (3)(C), by inserting  
2 “academic researcher,” after “association, insti-  
3 tution,”;

4 (2) in subsection (c)—

5 (A) in paragraph (1), by inserting “acces-  
6 sibility, connectivity,” after “United States, in-  
7 cluding”;

8 (B) by redesignating paragraphs (4)  
9 through (11) as paragraphs (5) through (12),  
10 respectively;

11 (C) by inserting after paragraph (3) the  
12 following new paragraph:

13 “(4) Methods and testing to determine the im-  
14 pacts, both positive and negative, to communities  
15 from major transportation investments.”;

16 (D) in paragraph (6), as so redesignated  
17 by subparagraph (B) of this paragraph—

18 (i) by striking “research project” and  
19 inserting “improvements against policy ob-  
20 jectives” in subparagraph (B); and

21 (ii) by inserting “and management”  
22 after “transportation operations” in sub-  
23 paragraph (C);

24 (E) in paragraph (12), as so redesignated  
25 by subparagraph (B) of this paragraph, by

1 striking “, including unobtrusive eyetracking  
2 technology”; and

3 (F) by adding at the end the following new  
4 paragraphs:

5 “(13) Environmental research, including re-  
6 search described in the Transportation Research  
7 Board Special Report 268, entitled ‘Surface Trans-  
8 portation Environmental Research: A Long-Term  
9 Strategy’, published in 2002.

10 “(14) Assessment of planning strategies that  
11 link land use and transportation in metropolitan  
12 areas.

13 “(15) Exploratory advanced research under  
14 subsection (d).

15 “(16) Research aimed at understanding how  
16 emerging trends (including demographic, economic,  
17 and social trends) will affect and are affected by sur-  
18 face transportation usage and needs.

19 “(17) Research on the link between transpor-  
20 tation and health (including asthma and obesity).

21 “(18) Research on, and dissemination of rec-  
22 ommendations and best practices aimed at address-  
23 ing, nontechnical barriers to technology deployment  
24 (which include fragmented local authority, rigid pro-

1 curement rules, and privacy and liability consider-  
2 ations).

3 “(19) Research on the effects of climate condi-  
4 tions (such as freezing, thawing, and precipitation)  
5 on highway construction and maintenance, including  
6 research to reduce or repair damage caused by cli-  
7 matic conditions, development of materials that can  
8 withstand climatic conditions, and research on the  
9 effects of climatic conditions on the costs of highway  
10 construction and maintenance.

11 “(20) Research to improve the infrastructure  
12 investment needs report under subsection (g)  
13 through new methods of collecting better quality  
14 data, monitoring in a system-wide manner, the de-  
15 termination of critical metrics to assess condition  
16 and performance, and new methods of statistical  
17 analysis and computer models to improve the pre-  
18 diction of future needs.

19 “(21) Research, development, and technology  
20 transfer related to asset management.

21 “(22) Any other surface transportation research  
22 topics that the Secretary determines, in accordance  
23 with the strategic planning process under section  
24 508, to be critical.”;

25 (3) in subsection (d)—

1 (A) in paragraph (1)—

2 (i) by inserting “exploratory” after  
3 “shall establish an”; and

4 (ii) by inserting “fundamental” after  
5 “508, that addresses”; and

6 (B) by striking paragraph (2) and insert-  
7 ing the following new paragraphs:

8 “(2) GOAL.—The goal of the research program  
9 under this subsection shall be to achieve break-  
10 throughs in understanding transportation phe-  
11 nomena. Exploratory advanced research should have  
12 a broader objective, longer time frame, multidisci-  
13 plinary nature, and have both a higher risk and a  
14 higher potential payoff than for problem-solving re-  
15 search.

16 “(3) AGENDA.—Not later than 15 months after  
17 that date of enactment of this paragraph, the Sec-  
18 retary shall develop an agenda for exploratory ad-  
19 vanced research. The agenda shall outline key ques-  
20 tions to be addressed and proposed areas of research  
21 to address these questions. The agenda shall also  
22 document the best way to accomplish this research  
23 (such as through Federal laboratories or academic  
24 researchers). Upon completion, the agenda shall be  
25 transmitted to the Committee on Transportation and

1 Infrastructure and the Committee on Science of the  
2 House of Representatives, and the Committee on  
3 Environment and Public Works of the Senate, and  
4 made available to the general public.

5 “(4) CONSULTATION.—The Secretary shall con-  
6 sult with the National Science Foundation in review-  
7 ing fundamental research proposals, and to obtain  
8 advice on peer review protocols.

9 “(5) WORKSHOP.—In order to develop the  
10 agenda for exploratory advanced research under  
11 paragraph (3), the Secretary shall convene a work-  
12 shop with appropriate researchers and policymakers  
13 from Federal and State agencies, as well as aca-  
14 demic researchers, to gather recommendations. The  
15 goal of the workshop shall be to determine priority  
16 areas of exploratory advanced research for Federal  
17 investment. Emphasis shall be placed on hearing  
18 from a diverse group of stakeholders. The Secretary  
19 shall make the results of the workshop widely avail-  
20 able to the public. The workshop shall be held within  
21 9 months after the date of the enactment of this  
22 paragraph.

23 “(6) USE OF FUNDS.—In any fiscal year with  
24 respect to which \$5,000,000 or more is appropriated  
25 for carrying out this subsection, at least  $\frac{1}{2}$  of the

1 funds in excess of \$5,000,000 shall be used to carry  
2 out the grant program described in paragraph (7).  
3 Funds appropriated for carrying out this subsection  
4 not used for the grant program described in para-  
5 graph (7) shall be used to carry out the agenda de-  
6 veloped under paragraph (3). All exploratory ad-  
7 vanced research proposals and results under this  
8 subsection shall be peer reviewed.

9 “(7) GRANT PROGRAM.—If funds are available  
10 under paragraph (6), the Secretary shall administer  
11 a competitive, merit-reviewed and peer-reviewed  
12 grant program to support fundamental research out-  
13 side of the Federal Government. Eligible applicants  
14 include academic researchers, and for-profit and not-  
15 for-profit research institutions. Under this grant  
16 program, research solicitations shall be open and  
17 broad in order to spur creativity and innovation.  
18 Funds may be used under this paragraph to support  
19 research in a range of topics, including materials,  
20 operations, and social science. Proposals with the  
21 greatest merit shall be funded, and projects may re-  
22 ceive funding for multiple years.”;

23 (4) in subsection (e), by striking “(105 Stat.”  
24 and all that follows through “performance program”

1 and inserting “and the Transportation Equity Act  
2 for the 21st Century”;

3 (5) by amending subsection (f) to read as fol-  
4 lows:

5 “(f) LONG-TERM BRIDGE PERFORMANCE PRO-  
6 GRAM.—

7 “(1) AUTHORITY.—The Secretary shall estab-  
8 lish a 20 year long-term bridge performance pro-  
9 gram.

10 “(2) GRANTS, COOPERATIVE AGREEMENTS, AND  
11 CONTRACTS.—Under the program, the Secretary  
12 shall make grants and enter into cooperative agree-  
13 ments and contracts to—

14 “(A) monitor, material-test, and evaluate  
15 test bridges;

16 “(B) analyze the data obtained in carrying  
17 out subparagraph (A); and

18 “(C) prepare products to fulfill program  
19 objectives and meet future bridge technology  
20 needs.”;

21 (6) in subsection (g)—

22 (A) in paragraph (1)—

23 (i) by striking “1999” and inserting  
24 “2005”; and

1 (ii) by striking “highway and bridge”  
2 each place it appears and inserting “sur-  
3 face transportation”; and

4 (B) in paragraph (2), by striking “bian-  
5 nual reports” and all that follows through  
6 “21st Century” and inserting “previous reports  
7 under this subsection”; and

8 (7) by adding at the end the following new sub-  
9 section:

10 “(h) TURNER-FAIRBANK HIGHWAY RESEARCH CEN-  
11 TER.—

12 “(1) IN GENERAL.—The Secretary shall operate  
13 in the Federal Highway Administration a Turner-  
14 Fairbank Highway Research Center.

15 “(2) USES OF THE CENTER.—The Turner-  
16 Fairbank Highway Research Center shall support  
17 the—

18 “(A) conduct of highway research and de-  
19 velopment related to new highway technology;

20 “(B) development of understandings, tools,  
21 and techniques that provide solutions to com-  
22 plex technical problems through the develop-  
23 ment of economical and environmentally sen-  
24 sitive designs, efficient and quality controlled

1 construction practices, and durable materials;  
2 and

3 “(C) development of innovative highway  
4 products and practices.”.

5 (b) GEOSPATIAL INFORMATION SYSTEMS.—Section  
6 5113 of the Transportation Equity Act of the 21st Cen-  
7 tury (23 U.S.C. 502 note) is amended by revising sub-  
8 section (b) to read as follows:

9 “(b) PROGRAM.—

10 “(1) NATIONAL POLICY.—The Secretary shall  
11 establish and maintain a national policy for the use  
12 of commercial remote sensing products and  
13 geospatial information technologies in national  
14 transportation infrastructure development and con-  
15 struction.

16 “(2) POLICY IMPLEMENTATION.—The Sec-  
17 retary shall develop new applications of commercial  
18 remote sensing products and geospatial information  
19 technologies for the implementation of the national  
20 policy established and maintained under (b)(1) of  
21 this section.”.

22 (c) ENVIRONMENT AND PLANNING.—

23 (1) AMENDMENT.—Section 507 of title 23,  
24 United States Code, is amended to read as follows:

1 **“§ 507. Surface transportation environment and plan-**  
2 **ning cooperative research program**

3 “(a) ESTABLISHMENT.—The Secretary shall estab-  
4 lish and support a collaborative, public-private,  
5 multimodal surface transportation environment and plan-  
6 ning cooperative research program.

7 “(b) AGREEMENT.—The Secretary shall make grants  
8 to or enter into cooperative agreements with the National  
9 Academy of Sciences, or another nonprofit research orga-  
10 nization established for this purpose, to support, admin-  
11 ister, and manage the surface transportation environment  
12 and planning cooperative research program.

13 “(c) ADVISORY BOARD.—

14 “(1) ESTABLISHMENT.—The organization de-  
15 scribed in subsection (b) shall establish an inde-  
16 pendent advisory board drawn from core partners  
17 that represent environment, transportation, sci-  
18 entific, and other interests, including the Depart-  
19 ment of Transportation, the Environmental Protec-  
20 tion Agency, the National Science Foundation, other  
21 Federal agencies, the States, regional and local gov-  
22 ernments, nonprofit organizations, academia, foun-  
23 dations, and the private sector.

24 “(2) RESPONSIBILITIES.—The Advisory Board  
25 shall have the responsibility for—

1           “(A) development of a research agenda,  
2           which shall be published annually, shall serve as  
3           the basis of the annual project solicitation, and  
4           shall be based on the multiyear strategy de-  
5           scribed in subsection (e), as revised under sub-  
6           paragraph (D) of this paragraph;

7           “(B) annual solicitation of project pro-  
8           posals, including open competition and peer re-  
9           view of research proposals;

10          “(C) development of project selection cri-  
11          teria, through an open and public consultation  
12          process with stakeholders, that emphasize—

13                 “(i) the development of fundamental  
14                 knowledge; and

15                 “(ii) collaborative research and fund-  
16                 ing; and

17          “(D) revision of the contents of the  
18          multiyear strategy described in subsection (e),  
19          through an open and public consultation proc-  
20          ess, with the first revision to be completed 3  
21          years after the first grants are awarded under  
22          this section and subsequent revisions biennially  
23          thereafter.

24          “(d) DISSEMINATION OF RESEARCH FINDINGS.—  
25          The organization described in subsection (b) and the De-

1 partment of Transportation shall proactively disseminate  
2 research findings under this section to researchers, practi-  
3 tioners, and decisionmakers, through conferences and  
4 seminars, field demonstrations, workshops, training pro-  
5 grams, presentations, testimony to government officials,  
6 the Internet, and publications for the general public.

7       “(e) CONTENTS.—The national research agenda for  
8 the surface transportation environment and planning co-  
9 operative research program required under subsection  
10 (c)(2)(C) shall be based on Transportation Research  
11 Board Special Report 268, entitled ‘Surface Transpor-  
12 tation Environmental Research: A Long-Term Strategy’,  
13 published in 2002, which included the following research  
14 areas:

15               “(1) Human Health.

16               “(2) Ecology and Natural Systems.

17               “(3) Environmental and Social Justice.

18               “(4) Emerging Technologies.

19               “(5) Land Use.

20               “(6) Planning and Performance Measures.

21       “(f) PROJECT FUNDING.—

22               “(1) MULTIYEAR FUNDING.—Projects may re-  
23 ceive funding for multiple years under this section.

24               “(2) JOINT PROJECT FUNDING.—In addition to  
25 using funds authorized for this section, the organiza-

1       tion that administers this program may seek and ac-  
2       cept additional funding sources from public and pri-  
3       vate entities capable of attracting and accepting  
4       funding from Federal agencies, States, local govern-  
5       ments, nonprofit foundations, and the private sector.

6       “(g) PROGRAMMATIC EVALUATIONS.—(1) Not later  
7       than 2 years after the first research project grants or con-  
8       tracts are awarded under this section, the Secretary shall  
9       enter into an arrangement with the National Academy of  
10      Public Administration to review the program under this  
11      section, and recommend improvements.

12      “(2) The National Academy of Public Administration  
13      review shall—

14              “(A) assess the degree to which the projects  
15              funded under this section have addressed the re-  
16              search topics identified in the strategy established in  
17              the Transportation Research Board Special Report  
18              268, including identifying those topics which have  
19              not yet been addressed;

20              “(B) assess the peer review process for project  
21              proposals, and assess research project results; and

22              “(C) assess the extent of stakeholder involve-  
23              ment in all facets of the program.

24      “(h) ANNUAL REPORT.—The organization described  
25      in subsection (b) shall prepare and transmit to the Sec-

1   retary an annual report that includes a project summary  
 2   for every project funded under this section. Each summary  
 3   shall characterize the project, summarize its status, and  
 4   identify sponsors.”.

5           (2) CONFORMING AMENDMENT.—The analysis  
 6   for chapter 5 of title 23, United States Code, is  
 7   amended by striking the item related to section 507  
 8   and inserting the following:

    “507. Surface transportation environment and planning cooperative research  
         program.”.

9   **SEC. 105. TECHNOLOGY DEPLOYMENT.**

10   Section 503 of title 23, United States Code, is  
 11 amended—

12           (1) in subsection (a)—

13               (A) by amending paragraph (7) to read as  
 14 follows:

15           “(7) GRANTS, COOPERATIVE AGREEMENTS, AND  
 16 CONTRACTS.—

17               “(A) IN GENERAL.—Under the program,  
 18 the Secretary may make grants and enter into  
 19 cooperative agreements and contracts with  
 20 States, metropolitan planning organizations,  
 21 local governments, other Federal agencies, uni-  
 22 versities and colleges, private sector entities,  
 23 and nonprofit organizations to foster alliances  
 24 and support efforts to stimulate advances in

1 transportation technology, and to pay the Fed-  
2 eral share of the costs of research, development,  
3 and technology transfer concerning innovative  
4 technologies.

5 “(B) APPLICATIONS.—To receive a grant,  
6 cooperative agreement, or contract, under this  
7 paragraph, an entity described in subparagraph  
8 (A) shall submit an application to the Sec-  
9 retary. The application shall be in such form  
10 and contain such information as the Secretary  
11 may require. The Secretary shall select and ap-  
12 prove the applications based on the applica-  
13 tions’ merit and on whether the project that is  
14 the subject of the grant, cooperative agreement,  
15 or contract meets the goals of the program de-  
16 scribed in paragraph (3).”;

17 (B) in paragraph (8), by inserting “and  
18 the Committee on Science” after “Transpor-  
19 tation and Infrastructure”;

20 (C) by redesignating paragraph (9) as  
21 paragraph (11); and

22 (D) by inserting after paragraph (8) the  
23 following new paragraphs:

24 “(9) TECHNOLOGY AND INFORMATION TRANS-  
25 FER.—The Secretary shall ensure that the informa-

1       tion and technology resulting from research con-  
2       ducted under this subsection is made available to  
3       State and local transportation departments, metro-  
4       politan planning organizations, and other interested  
5       parties.

6               “(10) FEDERAL SHARE.—The Federal share of  
7       the cost of a project under this subsection shall be  
8       determined by the Secretary.”; and

9               (2) in subsection (b)—

10                   (A) by striking “BRIDGE RESEARCH AND  
11                   CONSTRUCTION” and inserting “RESEARCH  
12                   AND DEPLOYMENT” in the subsection heading;

13                   (B) by amending paragraphs (1) and (2)  
14       to read as follows:

15               “(1) IN GENERAL.—The Secretary shall estab-  
16       lish and carry out a program to demonstrate the ap-  
17       plication of innovative technology in surface trans-  
18       portation infrastructure construction (such as  
19       bridges, pavements, and other structures) and safe-  
20       ty.

21               “(2) GOALS.—The goals of the program shall  
22       include—

23                   “(A) the development of new, cost-effective  
24                   innovative material for surface transportation  
25                   infrastructure applications;

1           “(B) the deployment and evaluation of  
2 safety technologies and innovations at the State  
3 and local levels, and the deployment of best  
4 practices in training, management, design, and  
5 planning;

6           “(C) the reduction of life-cycle costs of  
7 surface transportation infrastructure, including  
8 the costs of new construction, replacement,  
9 maintenance, and rehabilitation of deficient  
10 highway infrastructure;

11           “(D) the development and deployment of  
12 construction techniques to increase safety and  
13 reduce construction time and traffic congestion;

14           “(E) the development of engineering de-  
15 sign criteria for innovative products and mate-  
16 rials for use in surface transportation infra-  
17 structure;

18           “(F) the development of cost-effective and  
19 innovative techniques to separate vehicle and  
20 pedestrian traffic from railroad traffic;

21           “(G) the evaluation and documentation of  
22 the performance and benefits of innovative tech-  
23 nologies deployed to improve life, performance,  
24 cost effectiveness, safety, and customer satisfac-  
25 tion;

1           “(H) the refinement of innovative tech-  
2 nologies based on the evaluation described in  
3 subparagraph (G);

4           “(I) the wide dissemination of information  
5 developed under subparagraph (G);

6           “(J) the development of surface transpor-  
7 tation infrastructure, including alternative proc-  
8 esses for the seismic retrofit of bridges, that  
9 will withstand natural disasters and terrorist  
10 attacks;

11           “(K) for pavements, the development of  
12 designs and materials to reduce impacts of  
13 storm water runoff;

14           “(L) the development of new non-  
15 destructive infrastructure evaluation tech-  
16 nologies and techniques; and

17           “(M) effective technology transfer and in-  
18 formation dissemination to accelerate imple-  
19 mentation of innovative technologies.”;

20           (C) in paragraph (5), by striking “section”  
21 and inserting “subsection”; and

22           (D) by adding at the end the following new  
23 subsection:

24           “(c) RESEARCH ON THE NONTECHNICAL BARRIERS  
25 TO TECHNOLOGY DEPLOYMENT.—In order to support the

1 deployment goals established under subsection (a)(3), the  
2 Secretary shall carry out a research program addressing  
3 the nontechnical barriers to technology deployment, in-  
4 cluding fragmented authority at the local and regional  
5 level and rigid procurement rules. The goal of this re-  
6 search shall be to generate proposals for how to overcome  
7 these nontechnical barriers.”.

8 **SEC. 106. FUTURE STRATEGIC HIGHWAY RESEARCH PRO-**  
9 **GRAM.**

10 (a) AMENDMENT.—Chapter 5 of title 23, United  
11 States Code, is amended by adding at the end the fol-  
12 lowing new section:

13 **“§ 509. Future strategic highway research program**

14 “(a) ESTABLISHMENT.—The Secretary, in consulta-  
15 tion with the American Association of State Highway and  
16 Transportation Officials, shall enter into an arrangement  
17 with the National Academy of Sciences for the establish-  
18 ment of a Future Strategic Highway Research Program.

19 “(b) GRANTS, COOPERATIVE AGREEMENTS, AND  
20 CONTRACTS.—The Secretary may make grants to, and  
21 enter into cooperative agreements and contracts with, the  
22 American Association of State Highway and Transpor-  
23 tation Officials and the National Academy of Sciences to  
24 carry out activities under this section. Advance payments  
25 may be made as necessary to carry out the program under

1 this section. Although no matching funds are required for  
2 this program, collaborative research projects with multiple  
3 sources of funding shall be encouraged.

4 “(c) PERIOD OF AVAILABILITY.—Funds set aside to  
5 carry out this section shall remain available for the fiscal  
6 year for which such funds are made available and the  
7 three succeeding fiscal years.

8 “(d) SET ASIDE.—There are authorized to be appro-  
9 priated to the Secretary of Transportation for each of fis-  
10 cal years 2004 through 2009, to carry out this section,  
11 \$75,000,000.

12 “(e) PROGRAM ADMINISTRATION.—In carrying out  
13 the program under this section, the National Academy of  
14 Sciences shall ensure that—

15 “(1) the selection of projects and researchers  
16 shall be based on the open solicitation of proposals  
17 and be reviewed by panels of appropriate experts;  
18 and

19 “(2) State transportation officials and other  
20 stakeholders, including business, local governments,  
21 metropolitan planning organizations, environmental  
22 and community organizations, academia, other rel-  
23 evant Federal agencies, and other members of the  
24 transportation community are involved in the gov-  
25 ernance of the program at the executive, the overall

1 program, and the technical levels, through the use of  
2 expert panels and committees.

3 “(f) CONTENTS.—The program established under  
4 this section shall be based on Transportation Research  
5 Board Special Report 260, entitled ‘Strategic Highway  
6 Research: Saving Lives, Reducing Congestion, Improving  
7 Quality of Life’. It shall include the following research  
8 areas:

9 “(1) Accelerating the renewal of America’s  
10 highways.

11 “(2) Making a significant improvement in high-  
12 way safety.

13 “(3) Providing a highway system with reliable  
14 travel times.

15 “(4) Providing highway capacity in support of  
16 the Nation’s economic, environmental, multi-modal  
17 transportation, and social goals.

18 “(g) PROJECT EVALUATION.—The products of all re-  
19 search grants, cooperative agreements, and contracts  
20 awarded under this section shall be subject to peer review.

21 “(h) PROGRAMMATIC EVALUATIONS.—Within 2 years  
22 after the first research project grants, cooperative agree-  
23 ments, or contracts are awarded under this section, the  
24 Secretary shall enter into an arrangement with the Na-  
25 tional Academy of Public Administration to review the

1 program under this section, and to recommend improve-  
2 ments. The review shall—

3 “(1) assess the degree to which projects funded  
4 under this section have addressed the research topics  
5 identified in the research agenda established in  
6 Transportation Research Board Special Report 260,  
7 including identifying those topics which have not yet  
8 been addressed;

9 “(2) assess the merit and peer review process  
10 for project proposals, and assess research project re-  
11 sults; and

12 “(3) assess the extent of stakeholder involve-  
13 ment in all facets of the program.

14 “(i) ANNUAL PROGRESS AND PERFORMANCE RE-  
15 PORT.—The National Academy of Sciences shall produce  
16 an annual progress and performance report for the pro-  
17 gram under this section. The report shall summarize the  
18 status, funding, and sponsors of all funded projects by the  
19 research areas specified in subsection (f). It shall docu-  
20 ment the progress of each project relative to milestones  
21 included in the project proposal. The report shall identify  
22 research areas and projects remaining unfunded, and an-  
23 ticipated funding needs for completing that research. The  
24 report shall be submitted to the Secretary, to the Com-  
25 mittee on Transportation and Infrastructure and the

1 Committee on Science of the House of Representatives,  
2 and to the Committee on Environment and Public Works  
3 of the Senate.”.

4 (b) CONFORMING AMENDMENT.—The analysis of  
5 chapter 5 of title 23, United States Code, is amended by  
6 adding at the end the following new item:

“509. Future strategic highway research program.”.

7 **SEC. 107. UNIVERSITY TRANSPORTATION CENTERS.**

8 Section 5505 of title 49, United States Code, is  
9 amended to read as follows:

10 **“§ 5505. University transportation research**

11 “(a) REGIONAL CENTERS.—The Secretary of Trans-  
12 portation shall make grants to nonprofit institutions of  
13 higher learning to establish and operate 1 university  
14 transportation center in each of the 10 United States Gov-  
15 ernment regions that comprise the Standard Federal Re-  
16 gional Boundary System.

17 “(b) OTHER CENTERS.—The Secretary shall make  
18 grants to nonprofit institutions of higher learning to es-  
19 tablish and operate university transportation centers, in  
20 addition to the centers receiving grants under subsection  
21 (a), to address transportation management and research  
22 and development matters, with special attention to in-  
23 creasing the number of highly skilled individuals entering  
24 the field of transportation.

25 “(c) SELECTION OF GRANT RECIPIENTS.—

1           “(1) APPLICATIONS.—In order to be eligible to  
2 receive a grant under this section, a nonprofit insti-  
3 tution of higher learning shall submit to the Sec-  
4 retary an application that is in such form and con-  
5 tains such information as the Secretary may require.

6           “(2) SELECTION CRITERIA.—Except as other-  
7 wise provided by this section, the Secretary shall se-  
8 lect each recipient of a grant under this section  
9 through a competitive, peer-reviewed process on the  
10 basis of the following:

11                   “(A) For regional centers, the location of  
12 the center within the Federal region to be  
13 served.

14                   “(B) The demonstrated research and ex-  
15 tension resources available to the recipient to  
16 carry out this section.

17                   “(C) The capability of the recipient to pro-  
18 vide leadership in making national and regional  
19 contributions to the solution of immediate and  
20 long-range transportation problems.

21                   “(D) The recipient’s establishment of a  
22 surface transportation program encompassing  
23 several modes of transportation.

24                   “(E) The recipient’s demonstrated commit-  
25 ment of at least \$200,000 in regularly budgeted

1 institutional amounts each year to support on-  
2 going transportation research and education  
3 programs.

4 “(F) The recipient’s demonstrated ability  
5 to disseminate results of transportation re-  
6 search and education programs through a state-  
7 wide or regionwide continuing education pro-  
8 gram.

9 “(G) The strategic plan the recipient pro-  
10 poses to carry out under the grant.

11 “(d) OBJECTIVES.—Each university transportation  
12 center receiving a grant under this section shall conduct  
13 the following programs and activities:

14 “(1) Basic and applied research that supports  
15 the Department’s research agenda consistent with  
16 section 508 of title 23, the products of which are  
17 peer-reviewed by other experts in the field to ad-  
18 vance the body of knowledge in transportation.

19 “(2) An education program that includes multi-  
20 disciplinary course work, faculty and student partici-  
21 pation in research, and an opportunity for practical  
22 experience.

23 “(3) An ongoing program of technology transfer  
24 that makes research results available to potential

1 users in a form that can be implemented, utilized,  
2 or otherwise applied.

3 “(e) MAINTENANCE OF EFFORT.—To be eligible to  
4 receive a grant under this section, an applicant shall—

5 “(1) enter into an agreement with the Secretary  
6 to ensure that the applicant will maintain total ex-  
7 penditures from all other sources to establish and  
8 operate a university transportation center and re-  
9 lated educational and research activities at a level  
10 that is at least equal to the average level of those  
11 expenditures during the 2 fiscal years before the  
12 date on which the grant is provided;

13 “(2) provide the annual institutional contribu-  
14 tion required under subsection (c)(2);

15 “(3) submit to the Secretary, in a timely man-  
16 ner, for use by the Secretary in the preparation of  
17 the annual research report under section 508(e)(5)  
18 of title 23, an annual report on the projects and ac-  
19 tivities of the university transportation center for  
20 which funds are made available for the fiscal year  
21 covered by the report, a description of—

22 “(A) the goals of the center;

23 “(B) the educational activities carried out  
24 by the center (including a detailed summary of  
25 the budget for those educational activities);

1           “(C) teaching activities of faculty at the  
2 center;

3           “(D) each research project carried out by  
4 the center, including—

5                 “(i) the identity and location of each  
6 investigator working on a research project;

7                 “(ii) the overall funding amount for  
8 each research project (including the  
9 amounts expended for the project as of the  
10 date of the report);

11                “(iii) the current schedule for each re-  
12 search project; and

13                “(iv) the results of each research  
14 project through the date of submission of  
15 the report, with particular emphasis on re-  
16 sults for the fiscal year covered by the re-  
17 port; and

18           “(E) overall technology transfer and imple-  
19 mentation efforts of the center;

20           “(4) make use of National Research Council,  
21 Transportation Research Board, and Transportation  
22 Research Information Services online databases  
23 for—

24                 “(A) program development and strategic  
25 planning;

1           “(B) reporting of activities funded under  
2           this section; and

3           “(C) input and dissemination of results  
4           and reports from completed research; and

5           “(5) recommend a representative to serve as li-  
6           aision to the Transportation Research Board.

7           “(f) FEDERAL SHARE.—The Federal share of the  
8           costs of activities carried out using a grant made under  
9           subsection (a) is 80 percent of costs, and under subsection  
10          (b) is 50 percent of costs. The non-Federal share may in-  
11          clude funds provided to a recipient under section 503,  
12          504(b), or 505 of title 23, United States Code.

13          “(g) PROGRAM COORDINATION.—

14                  “(1) COORDINATION.—The Secretary shall co-  
15                  ordinate the research, education, training, and tech-  
16                  nology transfer activities that grant recipients carry  
17                  out under this section, disseminate the results of the  
18                  research, and establish and operate a clearinghouse.

19                  “(2) ANNUAL REVIEW AND EVALUATION.—At  
20                  least annually and consistent with the plan devel-  
21                  oped under section 508 of title 23, United States  
22                  Code, the Secretary shall review and evaluate pro-  
23                  grams the grant recipients carry out.

24                  “(3) FUNDING LIMITATION.—The Secretary  
25                  may use not more than 1 percent of amounts made

1 available from Government sources to carry out this  
2 subsection.

3 “(h) LIMITATION ON AVAILABILITY OF FUNDS.—  
4 Funds made available to carry out this program shall re-  
5 main available for obligation for a period of 2 years after  
6 the last day of the fiscal year for which such funds are  
7 authorized.

8 “(i) GRANTS.—The Secretary may make grants  
9 under this section as follows:

10 “(1) For grants under subsection (a)—

11 “(A) \$2,000,000 for fiscal year 2004;

12 “(B) \$3,000,000 for fiscal year 2005;

13 “(C) \$4,000,000 for fiscal year 2006;

14 “(D) \$4,000,000 for fiscal year 2007;

15 “(E) \$4,000,000 for fiscal year 2008; and

16 “(F) \$4,000,000 for fiscal year 2009.

17 “(2) For grants under subsection (b) to centers  
18 that received funding for fiscal years 2002 and 2003  
19 under this section—

20 “(A) \$2,000,000 for fiscal year 2004;

21 “(B) \$2,000,000 for fiscal year 2005; and

22 “(C) \$2,000,000 for fiscal year 2006.

23 “(3) For 6 additional grants under subsection  
24 (b)—

25 “(A) \$2,000,000 for fiscal year 2004;

1 “(B) \$2,000,000 for fiscal year 2005; and

2 “(C) \$2,000,000 for fiscal year 2006.

3 “(4) For 16 grants under subsection (b), which  
4 may include grants to centers described in para-  
5 graph (2)—

6 “(A) \$3,000,000 for fiscal year 2007;

7 “(B) \$3,000,000 for fiscal year 2008; and

8 “(C) \$3,000,000 for fiscal year 2009.

9 “(j) TRANSPORTATION EDUCATION DEVELOPMENT  
10 PILOT PROGRAM.—

11 “(1) ESTABLISHMENT.—The Secretary shall es-  
12 tablish a program to make grants to State Depart-  
13 ments of Transportation, who in conjunction with  
14 nonprofit institutions of higher education, will de-  
15 velop and test new curricula to educate the transpor-  
16 tation workforce.

17 “(2) SELECTION OF GRANT RECIPIENTS.—In  
18 selecting applications for awards under this sub-  
19 section, the Secretary shall consider—

20 “(A) the degree to which the new curricula  
21 will address the specific workforce needs of the  
22 State, evaluated on the basis of a State’s devel-  
23 opment of a strategic human resources plan  
24 and how the new curricula will help fulfill the  
25 plan;

1           “(B) the degree to which the new curricula  
2 will provide expertise in areas other than engi-  
3 neering, such as business administration, eco-  
4 nomics, information technology, environmental  
5 science, and law, as determined necessary by  
6 the State; and

7           “(C) a State’s commitment to continuing  
8 the program beyond the pilot effort.

9           “(3) NUMBER AND AMOUNT OF GRANTS.—For  
10 fiscal years 2004, 2005, and 2006, the Secretary  
11 shall make 4 grants under this subsection, each in  
12 the amount of \$1,000,000. For fiscal years 2007,  
13 2008, and 2009, the Secretary shall make 4 grants  
14 under this subsection, each in the amount of  
15 \$500,000.”.

16 **SEC. 108. INTELLIGENT TRANSPORTATION SYSTEMS.**

17       (a) AMENDMENT.—Subtitle C of title V of the Trans-  
18 portation Equity Act for the 21st Century is amended to  
19 read as follows:

20                   **“Subtitle C—Intelligent**  
21                   **Transportation Systems**

22 **“SEC. 5201. SHORT TITLE.**

23       “‘This subtitle may be cited as the ‘Intelligent Trans-  
24 portation Systems Act of 2003’.

1 **“SEC. 5202. GOALS AND PURPOSES.**

2 “(a) GOALS.—The goals of the intelligent transpor-  
3 tation system program include—

4 “(1) enhancement of surface transportation ef-  
5 ficiency and facilitation of intermodalism and inter-  
6 national trade to enable existing facilities to meet a  
7 significant portion of future transportation needs,  
8 including public access to employment, goods, and  
9 services, and to reduce regulatory, financial, and  
10 other transaction costs to public agencies and sys-  
11 tem users;

12 “(2) achievement of national transportation  
13 safety goals, including the enhancement of safe oper-  
14 ation of motor vehicles and nonmotorized vehicles,  
15 with particular emphasis on decreasing the number  
16 and severity of collisions;

17 “(3) protection and enhancement of the natural  
18 environment and communities affected by surface  
19 transportation, with particular emphasis on assisting  
20 State and local governments to achieve national en-  
21 vironmental goals;

22 “(4) accommodation of the needs of all users of  
23 surface transportation systems, including operators  
24 of commercial vehicles, passenger vehicles, motor-  
25 cycles, and bicycles, and including pedestrians and  
26 individuals with disabilities; and

1           “(5) improvement of the Nation’s ability to re-  
2           spond to security related or other man made emer-  
3           gencies and natural disasters, and enhancement of  
4           national defense mobility.

5           “(b) PURPOSES.—The Secretary shall implement ac-  
6           tivities under the intelligent transportation system pro-  
7           gram to, at a minimum—

8           “(1) develop and test new and emerging tech-  
9           nologies to meet the goals described in subsection  
10          (a);

11          “(2) expedite deployment, in both metropolitan  
12          and rural areas, and ensure integration and inter-  
13          operability of proven intelligent transportation sys-  
14          tems;

15          “(3) ensure that Federal, State, and local  
16          transportation officials have adequate knowledge of  
17          intelligent transportation systems for full consider-  
18          ation in the transportation planning process;

19          “(4) improve regional cooperation and oper-  
20          ations planning for effective intelligent transpor-  
21          tation system deployment;

22          “(5) promote the innovative use of private re-  
23          sources;

1           “(6) develop a workforce capable of developing,  
2           operating, and maintaining intelligent transportation  
3           systems; and

4           “(7) evaluate costs and benefits of intelligent  
5           transportation systems projects.

6   **“SEC. 5203. GENERAL AUTHORITIES AND REQUIREMENTS.**

7           “(a) SCOPE.—Subject to the provisions of this sub-  
8           title, the Secretary shall conduct an ongoing intelligent  
9           transportation system program to research, develop, and  
10          operationally test intelligent transportation systems and  
11          advance nationwide deployment of proven systems through  
12          research on barriers to deployment as a component of the  
13          surface transportation systems of the United States.

14          “(b) POLICY.—Intelligent transportation system re-  
15          search, development, operational tests, and deployment  
16          projects funded pursuant to this subtitle shall encourage  
17          and not displace public-private partnerships or private sec-  
18          tor investment in such research and development tests and  
19          projects.

20          “(c) COOPERATION WITH GOVERNMENTAL, PRI-  
21          VATE, AND EDUCATIONAL ENTITIES.—The Secretary  
22          shall carry out the intelligent transportation system pro-  
23          gram in cooperation with State and local governments and  
24          other public entities, the United States private sector, the  
25          Federal laboratories, and colleges and universities, includ-

1 ing historically black colleges and universities and other  
2 minority institutions of higher education.

3 “(d) CONSULTATION WITH FEDERAL OFFICIALS.—

4 In carrying out the intelligent transportation system pro-  
5 gram, the Secretary, as appropriate, shall consult with the  
6 Secretary of Commerce, the Secretary of the Treasury, the  
7 Secretary of Homeland Security, the Administrator of the  
8 Environmental Protection Agency, the Director of the Na-  
9 tional Science Foundation, and the heads of other Federal  
10 departments and agencies.

11 “(e) TECHNICAL ASSISTANCE, TRAINING, AND IN-

12 FORMATION.—The Secretary shall provide technical as-  
13 sistance, training, and information to State and local gov-  
14 ernments seeking to implement, operate, maintain, or  
15 evaluate intelligent transportation system technologies and  
16 services.

17 “(f) TRANSPORTATION PLANNING.—The Secretary

18 may provide funding to support adequate consideration of  
19 transportation system management and operations, in-  
20 cluding intelligent transportation systems, within metro-  
21 politan and statewide transportation planning processes.

22 “(g) INFORMATION CLEARINGHOUSE.—

23 “(1) IN GENERAL.—The Secretary shall—

24 “(A) maintain a repository for technical  
25 and safety data collected as a result of federally

1 sponsored projects carried out under this sub-  
2 title; and

3 “(B) make that information (except for  
4 proprietary information and data) readily avail-  
5 able to all users of the repository at an appro-  
6 priate cost.

7 “(2) DELEGATION OF AUTHORITY.—

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

13 “(B) FEDERAL ASSISTANCE.—If the Sec-  
14 retary delegates the responsibility, the entity to  
15 which the responsibility is delegated shall be eli-  
16 gible for Federal assistance under this section.

17 “(h) ADVISORY COMMITTEE.—

18 “(1) IN GENERAL.—The Secretary shall estab-  
19 lish an Advisory Committee to advise the Secretary  
20 on carrying out this subtitle.

21 “(2) MEMBERSHIP.—The Advisory Committee  
22 shall have no more than 20 members and include, at  
23 a minimum—

24 “(A) a representative from a State high-  
25 way department;

1           “(B) a representative from a local highway  
2 department;

3           “(C) a representative from a State, local,  
4 or regional transit agency;

5           “(D) a representative from a metropolitan  
6 planning organization;

7           “(E) a private sector vendor of intelligent  
8 transportation system technologies;

9           “(F) a private sector user of intelligent  
10 transportation system technologies;

11           “(G) a academic researcher who is a civil  
12 engineer;

13           “(H) a academic researcher who is a social  
14 scientist;

15           “(I) a representative from the Intelligent  
16 Transportation Society of America;

17           “(J) a representative from a public interest  
18 group concerned with safety;

19           “(K) a representative from a public inter-  
20 est group concerned with community develop-  
21 ment; and

22           “(L) members with expertise in planning,  
23 safety, and operations.

24           “(3) DUTIES.—The Advisory Committee shall,  
25 at a minimum, perform the following duties—

1           “(A) Provide input into the development of  
2 the National ITS Program Plan, and the Intel-  
3 ligent Transportation System portion of each  
4 strategic plan under section 508 of title 23,  
5 United States Code.

6           “(B) Review the National ITS Program  
7 Plan and the Intelligent Transportation System  
8 portion of each strategic plan under section 508  
9 of title 23, United States Code, and transmit  
10 the Advisory Committee’s views on the plans to  
11 Congress.

12           “(C) Analyze intelligent transportation sys-  
13 tems technologies, for which a plan or budget  
14 proposal has recommended funding for research  
15 and development activities or operational tests,  
16 to advise the Department on—

17                   “(i) whether the intelligent transpor-  
18 tation system technologies are likely to be  
19 deployed by users, and, if not, to determine  
20 the barriers to deployment;

21                   “(ii) the appropriate roles for govern-  
22 ment and the private sector in investing in  
23 specific intelligent transportation system  
24 technologies; and

1                   “(iii) whether these activities are like-  
2                   ly to advance either the state-of-the-prac-  
3                   tice or state-of-the-art in intelligent trans-  
4                   portation systems.

5                   “(4) APPLICABILITY OF FEDERAL ADVISORY  
6                   COMMITTEE ACT.—The Advisory Committee shall be  
7                   subject to the Federal Advisory Committee Act (5  
8                   U.S.C. App.).

9                   “(i) PROCUREMENT METHODS.—

10                  “(1) TECHNICAL ASSISTANCE.—The Secretary  
11                  shall develop appropriate technical assistance and  
12                  guidance to assist State and local agencies in evalu-  
13                  ating and selecting appropriate methods of procure-  
14                  ment for intelligent transportation system projects  
15                  carried out using funds made available from the  
16                  Highway Trust Fund, including innovative and non-  
17                  traditional methods such as the Information Tech-  
18                  nology Omnibus Procurement.

19                  “(2) INTELLIGENT TRANSPORTATION SYSTEM  
20                  SOFTWARE.—To the maximum extent practicable,  
21                  contracting officials shall use as a critical evaluation  
22                  criterion the Software Engineering Institute’s Capa-  
23                  bility Maturity Model, or another similar recognized  
24                  software design and development methodology, to re-  
25                  duce the cost, schedule, and performance risks asso-

1       ciated with the development, management, and inte-  
2       gration of intelligent transportation system software.

3       “(j) EVALUATIONS.—

4             “(1) GUIDELINES AND REQUIREMENTS.—

5                     “(A) IN GENERAL.—The Secretary shall  
6                     issue guidelines and requirements for the eval-  
7                     uation of operational tests and model deploy-  
8                     ment projects carried out under this subtitle.

9                     “(B) CONTENT.—Such evaluations shall  
10                    include specific, quantitative measures to deter-  
11                    mine whether a technology is meeting its in-  
12                    tended goal. To the maximum extent prac-  
13                    ticable, these measures shall evaluate the out-  
14                    come of the technology (such as accidents  
15                    avoided or decreased travel times or travel time  
16                    variability).

17                    “(C) OBJECTIVITY AND INDEPENDENCE.—

18                    The guidelines and requirements issued under  
19                    subparagraph (A) shall include provisions to en-  
20                    sure the objectivity and independence of the  
21                    evaluator so as to avoid any real or apparent  
22                    conflict of interest or potential influence on the  
23                    outcome by parties to any such test or deploy-  
24                    ment project or by any other formal evaluation  
25                    carried out under this subtitle.

1           “(D) FUNDING.—The guidelines and re-  
2           quirements issued under subparagraph (A) shall  
3           establish evaluation funding levels, based on the  
4           size and scope of each test or project, that en-  
5           sure adequate evaluation of the results of the  
6           test or project.

7           “(E) DISSEMINATION.—The Secretary  
8           shall make readily available through the Inter-  
9           net all information collected through evalua-  
10          tions carried out under this subtitle.

11          “(2) SPECIAL RULE.—Any survey, question-  
12          naire, or interview that the Secretary considers nec-  
13          essary to carry out the evaluation of any test, de-  
14          ployment project, or program assessment activity  
15          under this subtitle shall not be subject to chapter 35  
16          of title 44, United States Code.

17          “(k) USE OF RIGHTS-OF-WAY.—Intelligent transpor-  
18          tation system projects specified in section 5117(b)(3) and  
19          5117(b)(6) and involving privately owned intelligent trans-  
20          portation system components that are carried out using  
21          funds made available from the Highway Trust Fund shall  
22          not be subject to any law or regulation of a State or polit-  
23          ical subdivision of a State prohibiting or regulating com-  
24          mercial activities in the rights-of-way of a highway for  
25          which Federal-aid highway funds have been utilized for

1 planning, design, construction, or maintenance, if the Sec-  
2 retary of Transportation determines that such use is in  
3 the public interest. Nothing in this subsection shall affect  
4 the authority of a State or political subdivision of a State  
5 to regulate highway safety.

6 **“SEC. 5204. NATIONAL ITS PROGRAM PLAN.**

7 “(a) IN GENERAL.—

8 “(1) UPDATES.—The Secretary shall publish an  
9 update of the ‘National Intelligent Transportation  
10 Systems Program Plan Five-Year Horizon’, pub-  
11 lished in August, 2000. The Secretary shall consult  
12 with the Advisory Committee established under sec-  
13 tion 5203(h) in carrying out this section.

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

16 “(A) specify the goals, objectives, and mile-  
17 stones for the research and deployment of intel-  
18 ligent transportation systems in the context of  
19 major metropolitan areas, smaller metropolitan  
20 and rural areas, and commercial vehicle oper-  
21 ations;

22 “(B) evaluate how the intelligent transpor-  
23 tation systems program has progressed in  
24 achieving the goals, objectives, and milestones  
25 referred to in subparagraph (A);

1           “(C) compare actual outcomes of the intel-  
2           ligent transportation systems program over the  
3           last 5 years to projections from the 2000 Plan  
4           referred to in paragraph (1);

5           “(D) for each goal, objective, milestone, or  
6           projection found under subparagraph (B) or  
7           (C) not to have been achieved, document the  
8           barriers to achievement;

9           “(E) specify how specific programs and  
10          projects will achieve the goals, objectives, and  
11          milestones referred to in subparagraph (A), in  
12          the next 5 years;

13          “(F) specify necessary and realistically  
14          achievable timeframes and funding levels to  
15          conduct the programs and projects referred to  
16          in subparagraph (E) in order to achieve the  
17          goals, objectives, and milestones referred to in  
18          subparagraph (A);

19          “(G) develop a plan for addressing barriers  
20          documented under subparagraph (D);

21          “(H) identify activities that provide for the  
22          dynamic development of standards and proto-  
23          cols to promote and ensure interoperability in  
24          the implementation of intelligent transportation

1 system technologies, including actions taken to  
2 establish critical standards; and

3 “(I) establish a cooperative process with  
4 State and local governments for determining  
5 desired surface transportation system perform-  
6 ance levels and developing plans for incorpora-  
7 tion of specific intelligent transportation system  
8 capabilities into surface transportation systems.

9 “(b) REPORTING.—The National ITS Program Plan  
10 shall be transmitted to the Congress not later than August  
11 31, 2005.

12 “(c) ADVISORY COMMITTEE REVIEW.—The Advisory  
13 Committee established under section 5203(h) shall review  
14 the National ITS Program Plan that is transmitted to  
15 Congress under this section, and shall transmit the Advi-  
16 sory Committee’s views on the Plan to Congress.

17 **“SEC. 5205. INFORMATION STRATEGY.**

18 “(a) DEVELOPMENT AND IMPLEMENTATION.—The  
19 Secretary shall develop and implement a strategy to use  
20 information collected from intelligent transportation sys-  
21 tem technologies (including technologies used in roadway,  
22 transit, and in-vehicle applications) for traffic manage-  
23 ment and for planning, performance monitoring, program  
24 assessment, and policy applications. The Secretary shall  
25 ensure that the Bureau of Transportation Statistics plays

1 a significant role in the development of the strategy under  
2 this section.

3 “(b) CONSIDERATIONS.—The strategy developed  
4 under this section shall—

5 “(1) consider current data sources and propose  
6 future data sources, as well as proposing strategies  
7 for both real-time use and archived use of data;

8 “(2) determine what data should be centralized  
9 nationally in support of national planning and goals,  
10 what information should be aggregated regionally,  
11 and what information should be kept locally, and for  
12 nationally centralized data, identify how to ensure  
13 that data is collected and reported consistently;

14 “(3) assess the need for data standards;

15 “(4) outline how transportation decision proc-  
16 esses can make best use of real-time data;

17 “(5) outline a vision for the future linkages be-  
18 tween intelligent transportation system technologies  
19 and data;

20 “(6) identify public and private data sources  
21 other than intelligent transportation system data  
22 sources (such as roadway characteristics inventories  
23 and incident information) that, combined with intel-  
24 ligent transportation system data, would enhance the  
25 utility of intelligent transportation system data to

1 decisionmakers, and how these data sources can be  
2 merged;

3 “(7) identify how to make data most accessible  
4 and useful to users; and

5 “(8) identify what information would be useful  
6 to stakeholders at the local, State, regional, and na-  
7 tional levels.

8 “(c) **STAKEHOLDER INVOLVEMENT.**—In developing  
9 the strategy under this section, the Secretary shall involve  
10 developers and users of intelligent transportation system  
11 technologies, including State and local highway depart-  
12 ments, metropolitan planning organizations, transit agen-  
13 cies, travelers, the private sector, not-for-profit organiza-  
14 tions, and representatives from the planning, safety, oper-  
15 ations, and research communities.

16 “(d) **INCORPORATION INTO NATIONAL ARCHITEC-**  
17 **TURE.**—The strategy developed under this section shall,  
18 to the extent practicable, be incorporated into the national  
19 architecture.

20 “(e) **REPORT TO CONGRESS.**—Not later than 1 year  
21 after the date of the enactment of this subsection, the Sec-  
22 retary shall transmit to the Congress a report outlining  
23 the strategy developed under this section.

24 **“SEC. 5206. NATIONAL ARCHITECTURE AND STANDARDS.**

25 “(a) **IN GENERAL.**—

1           “(1) DEVELOPMENT, IMPLEMENTATION, AND  
2 MAINTENANCE.—Consistent with section 12(d) of  
3 the National Technology Transfer and Advancement  
4 Act of 1995 (15 U.S.C. 272 note; 110 Stat. 783),  
5 the Secretary shall develop, implement, and maintain  
6 a national architecture and supporting standards  
7 and protocols to promote the widespread use and  
8 evaluation of intelligent transportation system tech-  
9 nology as a component of the surface transportation  
10 systems of the United States.

11           “(2) GOAL.—The goal of the national architec-  
12 ture and standards shall be to ensure interoper-  
13 ability among, and efficiency of, intelligent transpor-  
14 tation system technologies implemented throughout  
15 the United States.

16           “(3) USE OF STANDARDS DEVELOPMENT ORGA-  
17 NIZATIONS.—In carrying out this section, the Sec-  
18 retary may use the services of such standards devel-  
19 opment organizations as the Secretary determines to  
20 be appropriate.

21           “(4) STANDARD VALIDATION.—The Secretary  
22 shall ensure that new standards promulgated for in-  
23 telligent transportation system technologies are test-  
24 ed and validated, and shall ensure that the results

1 of such testing and validation are made publicly  
2 available.

3 “(b) PROVISIONAL STANDARDS.—

4 “(1) IN GENERAL.—If the Secretary finds that  
5 the development or balloting of an intelligent trans-  
6 portation system standard jeopardizes the timely  
7 achievement of the objectives identified in subsection  
8 (a)(1) and (2), the Secretary may establish a provi-  
9 sional standard after consultation with affected par-  
10 ties, and using, to the extent practicable, the work  
11 product of appropriate standards development orga-  
12 nizations.

13 “(2) PERIOD OF EFFECTIVENESS.—A provi-  
14 sional standard established under paragraph (1)  
15 shall be published in the Federal Register and re-  
16 main in effect until the appropriate standards devel-  
17 opment organization adopts and publishes a stand-  
18 ard.

19 “(c) CONFORMITY WITH NATIONAL ARCHITEC-  
20 TURE.—

21 “(1) IN GENERAL.—Except as provided in para-  
22 graphs (2) and (3), the Secretary shall ensure that  
23 intelligent transportation system projects carried out  
24 using funds made available from the Highway Trust  
25 Fund, including funds made available to deploy in-

1 telligent transportation system technologies, conform  
2 to the national architecture, applicable standards or  
3 provisional standards, and protocols developed under  
4 subsection (a).

5 “(2) SECRETARY’S DISCRETION.—The Sec-  
6 retary may authorize exceptions to paragraph (1)  
7 for—

8 “(A) projects designed to achieve specific  
9 research objectives outlined in the National ITS  
10 Program Plan under section 5204 or the Sur-  
11 face Transportation Research and Development  
12 Strategic Plan developed under section 508 of  
13 title 23, United States Code; or

14 “(B) the upgrade or expansion of an intel-  
15 ligent transportation system in existence on the  
16 date of enactment of the Transportation Equity  
17 Act for the 21st Century, if the Secretary de-  
18 termines that the upgrade or expansion—

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

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

23 “(iii) is cost-effective as compared to  
24 alternatives that would meet the con-  
25 formity requirement of paragraph (1).

1           “(3) EXCEPTIONS.—Paragraph (1) shall not  
2           apply to funds used for operation or maintenance of  
3           an intelligent transportation system in existence on  
4           the date of enactment of the Transportation Equity  
5           Act for the 21st Century.

6   **“SEC. 5207. RESEARCH AND DEVELOPMENT.**

7           “(a) IN GENERAL.—The Secretary shall carry out a  
8           comprehensive program of research, development, and  
9           operational tests of intelligent vehicles and intelligent in-  
10          frastructure systems, as well as research into barriers to  
11          their deployment, and other similar activities that are nec-  
12          essary to carry out this subtitle.

13          “(b) PRIORITY AREAS.—Under the program, the Sec-  
14          retary shall give higher priority to funding projects that—

15                  “(1) reduce congestion in metropolitan regions;

16                  “(2) improve mobility and efficiency by address-  
17                  ing traffic management, incident management, tran-  
18                  sit management, toll collection, traveler information,  
19                  or highway operations systems;

20                  “(3) improve safety by focusing on crash-avoid-  
21                  ance and integration of in-vehicle crash protection  
22                  technologies with other onboard safety systems, in-  
23                  cluding the interaction of air bags and safety belts;

24                  “(4) improve security by focusing on responding  
25                  to security-related emergencies, and preventing such

1 emergencies, through tracking the movement of  
2 goods;

3 “(5) incorporate human factors research, in-  
4 cluding the science of the driving process;

5 “(6) improve deployment of proven technologies  
6 by addressing nontechnical barriers to the deploy-  
7 ment of intelligent transportation system tech-  
8 nologies, including institutional barriers such as  
9 fragmented authority at the local level, privacy con-  
10 siderations, and rigid procurement rules, and the  
11 best ways to develop partnerships to successfully de-  
12 ploy intelligent transportation system technologies;

13 “(7) facilitate the integration of intelligent in-  
14 frastructure, vehicle, and control technologies, in-  
15 cluding magnetic guidance control systems or other  
16 materials or magnetics research;

17 “(8) incorporate research on the impact of envi-  
18 ronmental, weather, and natural conditions on intel-  
19 ligent transportation systems, including the effects  
20 of cold climates; or

21 “(9) facilitate high-performance transportation  
22 systems, through methods such as congestion pric-  
23 ing, real-time facility management, rapid emergency  
24 response, and just-in-time transit.

1       “(c) OPERATIONAL TESTS.—Operational tests shall  
2 be used to evaluate promising technologies that have not  
3 yet been demonstrated. Operational tests conducted under  
4 this section shall be designed for the collection of data to  
5 permit objective evaluation of the results of the tests, deri-  
6 vation of cost-benefit information that is useful to others  
7 contemplating deployment of similar systems, and develop-  
8 ment and implementation of standards.

9       “(d) FEDERAL SHARE.—The Federal share of the  
10 cost of operational tests and demonstrations under sub-  
11 section (a) shall not exceed 80 percent.

12 **“SEC. 5208. USE OF FUNDS.**

13       “(a) CONGESTION REDUCTION.—At least  $\frac{1}{3}$  of funds  
14 spent under section 5207 for intelligent transportation  
15 systems research and development shall be used to re-  
16 search, develop, and operationally test technologies whose  
17 primary purpose is to reduce congestion.

18       “(b) OUTREACH AND PUBLIC RELATIONS LIMITA-  
19 TION.—

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

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

5           “(c) INFRASTRUCTURE DEVELOPMENT.—Funds  
6           made available to carry out this subtitle for operational  
7           tests—

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

11          “(2) to the maximum extent practicable, shall  
12          not be used for the construction of physical highway  
13          and transit infrastructure unless the construction is  
14          incidental and critically necessary to the implemen-  
15          tation of an intelligent transportation system  
16          project.

17          “(d) USE OF INNOVATIVE FINANCING.—

18          “(1) IN GENERAL.—The Secretary may use up  
19          to 25 percent of the funds made available to carry  
20          out this subtitle to make available loans, lines of  
21          credit, and loan guarantees for projects that are eli-  
22          gible for assistance under this subtitle and that have  
23          significant intelligent transportation system ele-  
24          ments.

1           “(2) CONSISTENCY WITH OTHER LAW.—Credit  
2 assistance described in paragraph (1) shall be made  
3 available in a manner consistent with the Transpor-  
4 tation Infrastructure Finance and Innovation Act of  
5 1998.

6 **“SEC. 5209. PROGRAM EVALUATION.**

7           “The Secretary shall enter into an arrangement with  
8 the National Academy of Sciences, or another independent  
9 institution, to evaluate the Department of Transpor-  
10 tation’s intelligent transportation system program. The  
11 evaluation shall assess, at a minimum—

12           “(1) how well the intelligent transportation sys-  
13 tem program has achieved its goals as set forth in  
14 the 2000 5-year plan referred to in section  
15 5204(a)(1), including—

16           “(A) expediting integrated intelligent  
17 transportation system deployment in metropoli-  
18 tan and rural areas for both passenger and  
19 freight transportation;

20           “(B) ensuring that Federal, State, and  
21 local transportation officials consider intelligent  
22 transportation systems in the transportation  
23 planning process and have adequate knowledge  
24 to do so;

1           “(C) improving regional cooperation and  
2           operations planning for effective intelligent  
3           transportation system deployment;

4           “(D) promoting the innovative use of pri-  
5           vate resources; and

6           “(E) developing a workforce capable of de-  
7           ploying, operating, and maintaining intelligent  
8           transportation systems; and

9           “(2) in areas where the intelligent transpor-  
10          tation system program has not met its goals, assess  
11          the barriers to meeting those goals, and make rec-  
12          ommendations for how those barriers may be over-  
13          come.

14   **“SEC. 5210. DEFINITIONS.**

15          “In this subtitle, the following definitions apply:

16           “(1) INTELLIGENT TRANSPORTATION INFRA-  
17          STRUCTURE.—The term ‘intelligent transportation  
18          infrastructure’ means fully integrated public sector  
19          intelligent transportation system components, as de-  
20          fined by the Secretary.

21           “(2) INTELLIGENT TRANSPORTATION SYS-  
22          TEM.—The term ‘intelligent transportation system’  
23          means electronics, communications, or information  
24          processing used singly or in combination to improve

1 the efficiency or safety of a surface transportation  
2 system.

3 “(3) NATIONAL ARCHITECTURE.—The term  
4 ‘national architecture’ means the common frame-  
5 work for interoperability adopted by the Secretary  
6 that defines—

7 “(A) the functions associated with intel-  
8 ligent transportation system user services;

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

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

13 “(D) the communications requirements as-  
14 sociated with the information flows.

15 “(4) NATIONAL ITS PROGRAM PLAN.—The term  
16 ‘National ITS Program Plan’ means the plan update  
17 required under section 5204(a).

18 “(5) STANDARD.—The term ‘standard’ means a  
19 document that—

20 “(A) contains technical specifications or  
21 other precise criteria for intelligent transpor-  
22 tation systems that are to be used consistently  
23 as rules, guidelines, or definitions of character-  
24 istics so as to ensure that materials, products,

1 processes, and services are fit for their pur-  
 2 poses; and

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

5 “(i) the widespread use and adoption  
 6 of intelligent transportation system tech-  
 7 nology as a component of the surface  
 8 transportation systems of the United  
 9 States; and

10 “(ii) interoperability among intelligent  
 11 transportation system technologies imple-  
 12 mented throughout the States.

13 “(6) STATE.—The term ‘State’ has the mean-  
 14 ing given the term under section 101 of title 23,  
 15 United States Code.”.

16 (b) TABLE OF CONTENTS AMENDMENT.—The items  
 17 relating to subtitle C of title V in the table of contents  
 18 of the Transportation Equity Act for the 21st Century are  
 19 amended to read as follows:

“Subtitle C—Intelligent Transportation Systems

- “Sec. 5201. Short title.
- “Sec. 5202. Goals and purposes.
- “Sec. 5203. General authorities and requirements.
- “Sec. 5204. National ITS Program Plan.
- “Sec. 5205. Information strategy.
- “Sec. 5206. National architecture and standards.
- “Sec. 5207. Research and development.
- “Sec. 5208. Use of funds.
- “Sec. 5209. Program evaluation.
- “Sec. 5210. Definitions.”.

1           (c) REPEAL.—The Intermodal Surface Transpor-  
2 tation Efficiency Act of 1991 is amended by striking part  
3 B of title VI (23 U.S.C. 307 note; 105 Stat. 2189).

4 **SEC. 109. NATIONAL MULTIMODAL TRENDS POLICY RE-**  
5 **SEARCH PROGRAM.**

6           (a) IN GENERAL.—The Secretary shall establish and  
7 carry out a National Multimodal Trends Policy Research  
8 Program that systematically addresses critical short-term,  
9 medium-term, and long-term social science issues affecting  
10 and affected by the transportation system.

11          (b) CONTENTS.—The program to be carried out  
12 under this section shall include—

13           (1) research on—

14                   (A) the critical factors and major trends  
15 affecting the success and performance of the  
16 Nation’s transportation system, as well as how  
17 such information can be incorporated into na-  
18 tional, State, and local decisionmaking;

19                   (B) the short-term, medium-term, and es-  
20 pecially long-term economic, demographic, and  
21 social trends that are affecting and are affected  
22 by the transportation system, including topics  
23 such as—

24                           (i) economic trends, including  
25 globalization and its effects on the transpor-

1           tation of people and goods, rapidly chang-  
2           ing information technology, the growing  
3           importance of metropolitan economies, di-  
4           versification of employment sites, innova-  
5           tions in goods movement, and larger capaci-  
6           ty and faster goods movement;

7           (ii) demographic trends, including  
8           population growth, increasing minority  
9           populations, increasing urbanization, and  
10          the aging of the population; and

11          (iii) social trends and issues, including  
12          increasing income disparity and its impli-  
13          cation for mobility and access to jobs, serv-  
14          ices and health care, the unique needs of  
15          rural populations, and the link between  
16          human factors and driver behavior;

17          (C) improvements in evaluation methodolo-  
18          gies and performance measures, and the evalua-  
19          tion of project and transportation system per-  
20          formance relative to the goals set forth in sec-  
21          tion 102;

22          (D) how institutional factors within and  
23          among the public and private sectors affect the  
24          development and successful deployment of new  
25          technologies;

1                   (E) links between public health and the  
2                   transportation system; and

3                   (F) other critical issues identified by the  
4                   Advisory Board established under subsection  
5                   (e); and

6                   (2) research on and the development of policy  
7                   analysis tools and methods.

8           (c) ESTABLISHMENT.—Not later than 120 days after  
9 the date of enactment of this Act, the Secretary shall enter  
10 into an arrangement with the National Academy of  
11 Sciences to establish an advisory board under subsection  
12 (e) and, except as provided in subsection (e), to support,  
13 administer, and manage the program.

14           (d) STRATEGIC PLAN.—Not later than 2 years after  
15 entering into the arrangement under subsection (e) and  
16 upon each update thereafter, the National Academy of  
17 Sciences shall transmit the strategic plan developed by the  
18 advisory board under subsection (e) to the Secretary, to  
19 the Committee on Transportation and Infrastructure and  
20 the Committee on Science of the House of Representa-  
21 tives, and to the Committee on Environment and Public  
22 Works of the Senate.

23           (e) ADVISORY BOARD.—

1           (1) ESTABLISHMENT.—The National Academy  
2 of Sciences shall establish an independent advisory  
3 board.

4           (2) MEMBERSHIP.—

5           (A) IN GENERAL.—A majority of members  
6 of the advisory board shall be experts in—

7           (i) transportation social science re-  
8 search; or

9           (ii) other social science fields with im-  
10 portant or potentially important relation-  
11 ships to transportation, selected after con-  
12 sultation with the Consortium of Social  
13 Science Associations.

14 Members selected under this subparagraph  
15 shall, to the extent practicable, be evenly di-  
16 vided between experts described in clause (i)  
17 and experts described in clause (ii).

18           (B) ADDITIONAL MEMBERS.—Additional  
19 members of the advisory board shall be evenly  
20 balanced among representatives of Federal,  
21 State, and local transportation agencies, other  
22 agencies with appropriate expertise, metropoli-  
23 tan planning organizations, transit operating  
24 agencies, and environmental and other non-  
25 profit organizations.

1           (3) RESPONSIBILITIES.—The advisory board  
2 shall be responsible for—

3           (A) the development of a strategic plan  
4 which shall specify at a minimum the goals, re-  
5 search priorities, and fiscal needs of the pro-  
6 gram, and which shall be updated periodically;

7           (B) overseeing the awarding of grants and  
8 contracts to carry out the research strategy;

9           (C) the development of the annual request  
10 for proposals and the solicitation of proposals  
11 through open competition with peer review; and

12           (D) the development of project selection  
13 criteria, through an open and public consulta-  
14 tion process with stakeholders.

15           (4) EVALUATION OF RESEARCH.—Research  
16 contracts and grants under this section shall require  
17 peer review of the research results.

18           (5) ELIGIBLE RESEARCH.—At least 75 percent  
19 of funds made available for research under this sec-  
20 tion shall support research directed to the priorities  
21 in the strategic plan, and up to 25 percent of such  
22 funds may support appropriate sponsor directed re-  
23 search.

24           (f) DISSEMINATION OF RESEARCH FINDINGS.—The  
25 National Academy of Sciences and the Department of

1 Transportation shall disseminate research findings under  
2 this section to researchers, practitioners, and decision-  
3 makers, through conferences and seminars, field dem-  
4 onstrations, workshops, training programs, presentations,  
5 testimony to government officials, the Internet, and publi-  
6 cations for the general public.

## 7 **TITLE II—MISCELLANEOUS**

### 8 **SEC. 201. AUTHORIZATION OF APPROPRIATIONS.**

9 There are authorized to be appropriated to the Sec-  
10 retary of Transportation to carry out sections 5312, 5313,  
11 5314, 5315, and 5322 of title 49, United States Code,  
12 and section 202 of this Act, relating to research and devel-  
13 opment, \$75,000,000 for each of the fiscal years 2004  
14 through 2009.

### 15 **SEC. 202. TRANSIT RESEARCH.**

16 (a) AMENDMENT.—Chapter 5 of title 23, United  
17 States Code, as amended by this Act, is further amended  
18 by adding at the end the following new section:

#### 19 **“§ 510. Innovative Practices and Technologies Dem- 20 onstration and Deployment Program**

21 “(a) ESTABLISHMENT.—The Secretary shall estab-  
22 lish an Innovative Practices and Technologies Demonstra-  
23 tion and Deployment Program.

24 “(b) PROGRAM GOALS.—The goals of the program  
25 are to—

1           “(1) demonstrate promising new transit prac-  
2           tices and technologies, including new business mod-  
3           els for managing and operating transit systems, that  
4           may increase ridership, increase accessibility, reduce  
5           cost, improve customer satisfaction, and improve  
6           safety;

7           “(2) evaluate, refine, and document the per-  
8           formance, benefits, and costs of innovative practices  
9           and technologies; and

10           “(3) effectively disseminate information to ac-  
11           celerate deployment of innovative practices and tech-  
12           nologies.

13           “(c) GRANTS, COOPERATIVE AGREEMENTS, AND  
14           CONTRACTS.—The Secretary may make grants to, or  
15           enter into cooperative agreements or contracts with, tran-  
16           sit agencies, States, other Federal agencies, universities  
17           and colleges, private sector entities, and nonprofit organi-  
18           zations to pay the Federal share of the cost of demonstra-  
19           tion and deployment projects concerning innovative prac-  
20           tices and technologies.

21           “(d) APPLICATIONS.—To receive a grant, cooperative  
22           agreement, or contract under this section, an entity de-  
23           scribed in subsection (c) shall submit an application to the  
24           Secretary. The application shall be in such form and con-  
25           tain such information as the Secretary may require. The

1 Secretary shall select and approve the applications based  
2 on the following criteria:

3           “(1) Whether the project meets the goals of the  
4           program.

5           “(2) Merit review.

6           “(3) The likelihood that the project will result  
7           in more widespread deployment of the practice or  
8           technology being proposed.

9           “(4) Preference shall be given to an application  
10          that represents a public-private partnership.

11          “(e) TECHNOLOGY AND INFORMATION TRANSFER.—  
12          The Secretary shall ensure that information about innova-  
13          tive practices and technologies supported under this sec-  
14          tion is made available to transit agencies, State and local  
15          transportation departments, and other interested parties.  
16          Information disseminated under this subsection shall in-  
17          clude both the costs and benefits of deploying an innova-  
18          tive practice or technology, and shall document—

19                 “(1) best practices for adopting successful prac-  
20                 tices or technologies; and

21                 “(2) the transferability of these practices and  
22                 technologies.

23          “(f) FEDERAL SHARE.—The Federal share of the  
24          cost of a project under this section shall be determined  
25          by the Secretary.”.

1 (b) CONFORMING AMENDMENT.—The analysis of  
2 chapter 5 of title 23, United States Code, as amended by  
3 this Act, is further amended by adding at the end the fol-  
4 lowing new item:

“510. Innovative Practices and Technologies Demonstration and Deployment  
Program.”.

5 **SEC. 203. TRANSPORTATION, ENERGY, AND ENVIRONMENT.**

6 (a) IN GENERAL.—As part of the National Climate  
7 Change Technology Initiative and the Climate Change Re-  
8 search Initiative, the Secretary shall establish and carry  
9 out a multimodal energy and climate change program to  
10 study the relationship of transportation, energy, and cli-  
11 mate change.

12 (b) CONTENTS.—The program to be carried out  
13 under this section shall include, but not be limited to, re-  
14 search designed to—

15 (1) identify, develop and evaluate strategies to  
16 improve energy efficiency and reduce greenhouse gas  
17 emissions from transportation sources; and

18 (2) identify and evaluate the potential effects of  
19 climate changes on the nation’s transportation sys-  
20 tems, and strategies to address these effects.

21 (c) PROJECT SELECTION.—Activities to be under-  
22 taken in this program will be determined by an internal  
23 steering committee established by the Secretary of Trans-  
24 portation. This intermodal committee shall include rep-

1 representatives from the Office of the Secretary and oper-  
2 ating administrations within the Department of Transpor-  
3 tation as designated by the Secretary.

4 (d) GRANTS, COOPERATIVE AGREEMENTS AND CON-  
5 TRACTS.—The Secretary may carry out this program inde-  
6 pendently or by making grants to, or entering into con-  
7 tracts and cooperative agreements with, a Federal agency,  
8 State agency, local agency, authority, association, non-  
9 profit or for-profit corporation, or institution of higher  
10 education.

11 **SEC. 204. NATIONAL COOPERATIVE FREIGHT TRANSPOR-**  
12 **TATION RESEARCH PROGRAM.**

13 (a) AUTHORIZATION.—To carry out a national coop-  
14 erative freight transportation research program, there is  
15 authorized the following sums:

16 (1) \$8,000,000 for each of fiscal years 2004  
17 and 2005.

18 (2) \$10,000,000 for each of fiscal years 2006  
19 and 2007.

20 (3) \$12,000,000 for each of fiscal years 2008  
21 and 2009.

22 (b) IN GENERAL.—Chapter 5 of title 23, United  
23 States Code, is amended by adding at the end the fol-  
24 lowing:

1 **“§ 509. National Cooperative Freight Transportation**  
2 **Research Program**

3 “(a) ESTABLISHMENT.—The Secretary shall estab-  
4 lish and support a national cooperative freight transpor-  
5 tation research program.

6 “(b) AGREEMENT.—The Secretary shall enter into an  
7 agreement with the National Academy of Sciences to sup-  
8 port and carry out administrative and management activi-  
9 ties relating to the governance of the national cooperative  
10 freight transportation research program.

11 “(c) ADVISORY COMMITTEE.—The National Acad-  
12 emy of Sciences shall select an advisory committee con-  
13 sisting of a representative cross-section of freight stake-  
14 holders, including the Department of Transportation,  
15 other Federal agencies, State transportation departments,  
16 local governments, the American Association of State  
17 Highway and Transportation Officials and other nonprofit  
18 entities (including environmental groups), academia, and  
19 the private sector.

20 “(d) GOVERNANCE.—The national cooperative  
21 freight transportation research program established under  
22 this section shall include the following administrative and  
23 management elements:

24 “(1) NATIONAL RESEARCH AGENDA.—The advi-  
25 sory committee, in consultation with stakeholders,  
26 shall recommend a national research agenda for the

1 national cooperative freight transportation research  
2 program. The national research agenda shall include  
3 a multi-year strategic plan.

4 “(2) STAKEHOLDER INVOLVEMENT.—Stake-  
5 holders may—

6 “(A) submit research proposals to the advi-  
7 sory committee;

8 “(B) participate in merit reviews of re-  
9 search proposals and peer reviews of research  
10 products; and

11 “(C) receive research results.

12 “(3) OPEN COMPETITION AND PEER REVIEW OF  
13 RESEARCH PROPOSALS.—The National Academy of  
14 Sciences shall award research contracts and grants  
15 through open competition and merit review con-  
16 ducted on a regular basis.

17 “(4) EVALUATION OF RESEARCH.—

18 “(A) PEER REVIEW.—Research contracts  
19 and grants shall allow peer review of the re-  
20 search results.

21 “(B) PROGRAMMATIC EVALUATIONS.—The  
22 National Academy of Sciences may conduct  
23 periodic programmatic evaluations on a regular  
24 basis.

1           “(5) DISSEMINATION OF RESEARCH FIND-  
2           INGS.—The National Academy of Sciences shall dis-  
3           seminate research findings to researchers, practi-  
4           tioners, and decision-makers, through conferences  
5           and seminars, field demonstrations, workshops,  
6           training programs, presentations, testimony to gov-  
7           ernment officials, world wide web, publications for  
8           the general public, and other appropriate means.

9           “(e) CONTENTS.—The national research agenda for  
10          the national cooperative freight transportation research  
11          program required under subsection (d)(1) shall include re-  
12          search in the following areas:

13               “(1) Techniques for estimating and quantifying  
14               public benefits derived from freight transportation  
15               projects.

16               “(2) Alternative approaches to calculating the  
17               contribution of truck traffic to congestion on specific  
18               highway segments.

19               “(3) The feasibility of freight villages as a  
20               means of consolidating origins and destinations for  
21               freight movement.

22               “(4) Methods for incorporating estimates of  
23               international trade into landside transportation plan-  
24               ning.

1           “(5) The use of technology applications to in-  
2           crease capacity of highway lanes dedicated to truck-  
3           only traffic.

4           “(6) Development of physical and policy alter-  
5           natives for separating car and truck traffic.

6           “(7) Ways to synchronize infrastructure im-  
7           provements with freight transportation demand.

8           “(8) The effect of changing patterns of freight  
9           movement on transportation planning decisions re-  
10          lating to rest areas.

11          “(9) Additional priorities to identify and ad-  
12          dress the emerging and future research needs re-  
13          lated to freight transportation.

14          “(f) FUNDING.—

15                 “(1) FEDERAL SHARE.—The Federal share of  
16                 the cost of an activity carried out using such funds  
17                 shall be up to 100 percent, and such funds shall re-  
18                 main available until expended.

19                 “(2) USE OF NON-FEDERAL FUNDS.—In addi-  
20                 tion to using funds authorized for this section, the  
21                 National Academy of Sciences may seek and accept  
22                 additional funding sources from public and private  
23                 entities capable of accepting funding from the  
24                 United States Department of Transportation (Fed-  
25                 eral Highway Administration, Federal Transit Ad-

1       ministration, Federal Railroad Administration, Re-  
2       search and Special Programs Administration, and  
3       the National Highway Traffic Safety Administra-  
4       tion), states, local governments, nonprofit founda-  
5       tions, and the private sector.”.

6       (c) CONFORMING AMENDMENT.—The analysis for  
7       chapter 5 of title 23, United States Code, is amended by  
8       redesignating section 509 as follows:

“509. National cooperative freight transportation research program.”.

