

111<sup>TH</sup> CONGRESS  
1<sup>ST</sup> SESSION

# H. R. \_\_\_\_\_

To reauthorize surface transportation research, development, and technology transfer activities, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

M. \_\_\_\_\_ introduced the following bill; which was referred to the Committee on \_\_\_\_\_

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## A BILL

To reauthorize surface transportation research, development, and technology transfer activities, 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. FINDINGS.**

4 Congress finds the following:

5 (1) A comprehensive and coordinated research  
6 agenda is required to guide all Department of  
7 Transportation research, development, and tech-  
8 nology transfer programs on the focus areas of liv-  
9 ability, sustainability, and performance for the sur-  
10 face transportation system. The Department cur-

1           rently lacks a research, development, and technology  
2           transfer strategic plan with quantifiable goals, ex-  
3           pected outcomes, implementation strategies, and per-  
4           formance measures.

5           (2) The surface transportation sector contrib-  
6           utes 28 percent of the total United States carbon  
7           emissions. To mitigate the impact of the surface  
8           transportation sector on the climate, the Depart-  
9           ment's Office of Climate Change and Environment  
10          should increase research efforts on effective strate-  
11          gies to reduce emissions from surface transportation  
12          infrastructure.

13          (3) Coordinated research and technology trans-  
14          fer on pavement and paving practices is essential to  
15          developing roads that are more durable, consume  
16          less energy in construction and maintenance, and  
17          are less disruptive to the environment.

18          (4) Technology transfer is an integral part of  
19          research and engineering. Additional efforts are re-  
20          quired to ensure that successful research results are  
21          deployed to the field.

22          (5) The University Transportation Center pro-  
23          gram conducts important research and trains future  
24          transportation professionals. However, the system

1 could be better integrated into the Department of  
2 Transportation research and development activities.

3 **SEC. 2. STRATEGIC PLAN.**

4 (a) IN GENERAL.—The Administrator shall develop  
5 annually a strategic plan to guide surface transportation  
6 research, development, and technology transfer activities  
7 within and funded by the Department for the 3-year pe-  
8 riod beginning with the upcoming fiscal year. Such stra-  
9 tegic plan shall include—

10 (1) the focus areas of national importance that  
11 such activities will address, including community liv-  
12 ability, sustainability, and performance measures for  
13 transportation systems;

14 (2) quantifiable goals, expected outcomes, im-  
15 plementation strategies, timetables, and performance  
16 measures for each such focus area;

17 (3) the identification of stakeholders and their  
18 role in identifying research needs and priorities; and

19 (4) specific activities for technology transfer  
20 and the application and utilization of research re-  
21 sults.

22 (b) SUBMISSION.—Beginning with the first submis-  
23 sion after the date of enactment of this Act of the Presi-  
24 dent's annual budget request to Congress, and annually  
25 thereafter, the Administrator shall submit to the appro-

1 p r i a t e C o n g r e s s i o n a l c o m m i t t e e s t h e s t r a t e g i c p l a n d e v e l -  
2 o p e d u n d e r s u b s e c t i o n ( a ) a n d s h a l l m a k e s u c h p l a n a v a i l -  
3 a b l e t o t h e p u b l i c o n t h e A d m i n i s t r a t i o n ' s W e b s i t e .

4 **SEC. 3. UTC PROGRAM MANAGEMENT.**

5 (a) REVIEW PROCESS.—

6 (1) IN GENERAL.—The Administrator shall de-  
7 v e l o p a n d e x e c u t e a r e v i e w p r o c e s s t o a s s e s s t h e p e r -  
8 f o r m a n c e o f e a c h U T C .

9 (2) REVIEW CRITERIA.—Not later than 1 year  
10 a f t e r t h e d a t e o f e n a c t m e n t o f t h i s A c t , t h e A d m i n i s -  
11 t r a t o r s h a l l d e v e l o p a n d m a k e a v a i l a b l e t o U T C s a n d  
12 t h e p u b l i c t h e c r i t e r i a t h a t w i l l b e u s e d i n t h e r e v i e w  
13 p r o c e s s u n d e r p a r a g r a p h ( 1 ) . S u c h c r i t e r i a s h a l l , a t  
14 a m i n i m u m , b e c o n s i s t e n t w i t h t h e p e r f o r m a n c e  
15 m e a s u r e s i d e n t i f i e d i n t h e s t r a t e g i c p l a n u n d e r s e c -  
16 t i o n 2 .

17 (3) TIMING.—The Administrator shall develop  
18 a n d e x e c u t e t h e r e v i e w p r o c e s s u n d e r p a r a g r a p h ( 1 )  
19 i n s u c h a m a n n e r t h a t a l l U T C s a r e r e v i e w e d d u r i n g  
20 a 3 - y e a r p e r i o d w i t h t h e n u m b e r o f U T C s b e i n g r e -  
21 v i e w e d d i s p e r s e d e v e n l y t h r o u g h o u t s u c h p e r i o d .

22 (4) TRANSPARENCY.—The Administrator shall  
23 m a k e r e s u l t s o f t h e r e v i e w p r o c e s s f o r e a c h U T C  
24 a v a i l a b l e t o t h e p u b l i c o n t h e A d m i n i s t r a t i o n ' s W e b  
25 s i t e .

1 (b) GRANTS.—The Administrator shall utilize the re-  
2 sults of the review process to ensure high quality surface  
3 transportation research, development, technology transfer,  
4 and education at UTCs.

5 (c) INTERNSHIP GRANT PROGRAM.—To carry out the  
6 objective of expanding the transportation workforce, the  
7 Administrator may establish a grant program to fund in-  
8 ternships for students participating in the UTC program  
9 at State departments of transportation, metropolitan plan-  
10 ning organizations, and other appropriate organizations as  
11 identified by the Administrator.

12 (d) REPORTS.—

13 (1) ANNUAL.—The Administrator shall submit  
14 to the appropriate Congressional committees and  
15 make available to the public on the Administration's  
16 Web site an annual report on the UTC program, de-  
17 tailing—

18 (A) the activities of the UTCs during the  
19 previous year and how such activities reflect the  
20 priorities in the strategic plan;

21 (B) the results of the reviews conducted  
22 during the previous year;

23 (C) the progress of UTCs toward meeting  
24 the goals and performance measures identified  
25 in the strategic plan developed under section 2;

1 (D) information about any grants awarded  
2 under subsection (b); and

3 (E) information about any grants awarded  
4 under subsection (c).

5 (2) MATCHING FUND RECOMMENDATION.—

6 Within 6 months after the date of enactment of this  
7 Act, the Administrator shall submit a report to the  
8 appropriate Congressional committees with rec-  
9 ommendations concerning the appropriate require-  
10 ment under section 5506(j) of title 49, United  
11 States Code, for the Federal share of costs for ac-  
12 tivities carried out using a grant awarded under sec-  
13 tion 5506 of such title.

14 (3) EXTENSION CENTERS.—

15 (A) IN GENERAL.—Within 6 months after  
16 the date of enactment of this Act, the Adminis-  
17 trator, in consultation with the Director of the  
18 National Institute of Standards and Tech-  
19 nology, shall submit a report to Congress on the  
20 advisability of creating transportation tech-  
21 nology extension centers at UTCs.

22 (B) CONTENTS.—In such report, the Ad-  
23 ministrator shall—

24 (i) assess the role of UTCs to enable  
25 workforce education in their regional

1 transportation communities and to pro-  
2 mote the deployment and transfer of new  
3 transportation technology, tools, tech-  
4 niques, and methods; and

5 (ii) include an operational plan, iden-  
6 tify the recipients of technical assistance  
7 provided by UTCs, and identify the needs  
8 of those recipients.

9 (4) FINAL REPORT.—Not later than 50 months  
10 after the date of enactment of this Act, the Adminis-  
11 trator shall submit to the appropriate Congressional  
12 committees and make available to the public on the  
13 Administration’s Web site a final report containing  
14 an analysis of all of the reviews of UTCs conducted  
15 under this section, a determination as to whether the  
16 UTC program is effectively meeting the research  
17 needs identified in the strategic plan developed  
18 under section 2, and whether any UTCs are per-  
19 forming inadequately.

20 **SEC. 4. VISITING COMMITTEE ON TRANSPORTATION RE-**  
21 **SEARCH.**

22 (a) IN GENERAL.—The Secretary shall establish a  
23 visiting committee on surface transportation research (in  
24 this Act referred to as the “Committee”), which shall re-  
25 view and make recommendations regarding the quality of

1 the surface transportation research, development, and  
2 technology transfer activities being carried out by the De-  
3 partment, including the development and execution of the  
4 strategic plan under section 2 and the coordination of such  
5 activities by the Administrator.

6 (b) MEMBERSHIP.—The Committee shall be com-  
7 posed of 15 members appointed by the Secretary. In mak-  
8 ing such appointments, the Secretary shall—

9 (1) consider recommendations submitted by the  
10 National Academies, professional societies, business  
11 associations, labor associations, and other appro-  
12 priate organizations;

13 (2) ensure that members do not have any con-  
14 flicts of interest;

15 (3) not appoint employees of the Federal Gov-  
16 ernment;

17 (4) ensure that members are eminent in rel-  
18 evant fields, such as transportation research, trans-  
19 portation engineering, product development, labor,  
20 education, transportation consulting, environment,  
21 or State or local government; and

22 (5) select members to provide adequate rep-  
23 resentation of a cross-section of—

24 (A) surface transportation researchers, de-  
25 cision makers at the State and local levels of

1 government, transportation practitioners, and  
2 others in the transportation research, develop-  
3 ment, and technology user community; and

4 (B) expertise in the focus areas of national  
5 importance.

6 (c) TERMS.—

7 (1) IN GENERAL.—Each member of the Com-  
8 mittee shall be appointed for a term of 3 years, ex-  
9 cept as provided in paragraphs (2) and (3).

10 (2) TERMS OF INITIAL APPOINTEES.—As des-  
11 ignated by the Secretary at the time of appointment,  
12 of the members first appointed—

13 (A) 5 members shall be appointed for a  
14 term of 1 year;

15 (B) 5 members shall be appointed for a  
16 term of 2 years; and

17 (C) 5 members shall be appointed for a  
18 term of 3 years.

19 (3) VACANCIES.—Any member appointed to fill  
20 a vacancy occurring before the expiration of the  
21 term for which the member's predecessor was ap-  
22 pointed shall be appointed only for the remainder of  
23 such term.

24 (4) ROTATION.—Any person who has completed  
25 2 consecutive full terms of service on the Committee

1 shall thereafter be ineligible for appointment during  
2 the 1-year period following the expiration of the sec-  
3 ond such term.

4 (d) MEETINGS.—

5 (1) IN GENERAL.—The Committee shall meet  
6 at least twice each year at the call of the Chair-  
7 person and, in addition, whenever one-third of the  
8 members of the Committee so request in writing.

9 (2) NOTICE.—Each member of the Committee  
10 shall be given appropriate notice of the call of such  
11 meeting not less than 15 days prior to any meeting,  
12 whenever possible.

13 (3) VIRTUAL MEETINGS; TELECONFERENCES.—  
14 The Committee may conduct meetings using elec-  
15 tronic methods if each member may fully participate  
16 in the deliberations of the Committee in real-time.

17 (e) QUORUM.—A majority of the members of the  
18 Committee shall constitute a quorum.

19 (f) RATES OF PAY; TRAVEL EXPENSES.—Each mem-  
20 ber shall serve without pay, except that each member shall  
21 receive travel expenses, including per diem in lieu of sub-  
22 sistence, in accordance with applicable provisions under  
23 subchapter I of chapter 57 of title 5, United States Code.

24 (g) SUBCOMMITTEES.—

1           (1) EXECUTIVE COMMITTEE.—The Committee  
2 shall have an executive committee and may delegate  
3 to it or to the Secretary such of the powers and  
4 functions granted to the Committee by this Act as  
5 it determines appropriate.

6           (2) ADDITIONAL COMMITTEES.—The Com-  
7 mittee is authorized to appoint from among its mem-  
8 bers such other committees as it determines nec-  
9 essary and to assign to committees so appointed  
10 such survey and advisory functions as the Com-  
11 mittee deems appropriate to assist it in exercising its  
12 powers and functions under this Act.

13 (h) CHAIRPERSON.—

14           (1) ELECTION.—The election of the Chair-  
15 person and Vice Chairperson of the Committee shall  
16 take place at each annual meeting occurring in an  
17 even-numbered year.

18           (2) SUBSTITUTION.—The Vice Chairperson  
19 shall perform the duties of the Chairperson in the  
20 absence of the Chairperson.

21           (3) VACANCY.—In case a vacancy occurs in the  
22 chairpersonship or vice chairpersonship, the Com-  
23 mittee shall elect a member to fill such vacancy.

24 (i) REPORT.—

25           (1) ANNUAL.—

1 (A) IN GENERAL.—Not later than 30 days  
2 after the submittal to Congress of the Presi-  
3 dent’s annual budget request in each year, the  
4 Committee shall transmit an annual report to  
5 the Secretary for submission to the appropriate  
6 Congressional committees.

7 (B) CONTENTS.—Such report shall deal  
8 essentially, though not necessarily exclusively,  
9 with policy issues or matters which affect the  
10 surface transportation research, development,  
11 and technology transfer activities at the De-  
12 partment. Each such report shall comment on  
13 the strategic plan developed under section 2.  
14 Each such report shall also identify future  
15 areas of priority surface transportation research  
16 for the Department.

17 (2) ADDITIONAL.—The Committee shall trans-  
18 mit to the Secretary and the appropriate Congres-  
19 sional committees such additional reports on specific  
20 policy matters as it determines appropriate.

21 **SEC. 5. OFFICE OF CLIMATE CHANGE AND ENVIRONMENT.**

22 Section 102(g) of title 49, United States Code is  
23 amended—

24 (1) in paragraph (1) in the matter preceding  
25 subparagraph (A), by striking “Department” and in-

1       serting “Research and Innovative Technology Ad-  
2       ministration in the Department”;

3               (2) by redesignating paragraph (2) as para-  
4       graph (7);

5               (3) by inserting after paragraph (1) the fol-  
6       lowing new paragraphs:

7               “(2) IMPACT REDUCTION RESEARCH ACTIVI-  
8       TIES.—

9                       “(A) IN GENERAL.—The Office established  
10                      under paragraph (1) shall fund or coordinate  
11                      research, development, and technology transfer  
12                      activities to develop, refine, and promote the  
13                      adoption of strategies to reduce vehicle miles  
14                      traveled, reduce congestion, reduce construction  
15                      and maintenance-related emissions and energy  
16                      consumption, and assess consumer acceptance  
17                      of and infrastructure needs for alternative fuels  
18                      and improved vehicle technology and other  
19                      strategies to reduce greenhouse gas emissions  
20                      and conserve energy arising from surface trans-  
21                      portation infrastructure, operation, and use.

22                      “(B) ACTIVITIES.—Research activities  
23                      shall include the following:

1           “(i) Assessments of the impact, cost-  
2 effectiveness, and collateral benefits of  
3 emissions and energy reduction strategies.

4           “(ii) The development of technologies,  
5 tools, and techniques to reduce emissions  
6 and energy consumption throughout the  
7 lifecycle of transportation infrastructure.

8           “(iii) Congestion reduction and speed  
9 management strategies.

10           “(iv) Assessments of the impact of  
11 land use change on surface emissions and  
12 other factors, such as congestion, mobility,  
13 and accessibility, and barriers to land use  
14 change.

15           “(v) Infrastructure requirements for  
16 alternative fuels and vehicles.

17           “(vi) Traveler behaviors with respect  
18 to mode-choice, response to transportation  
19 pricing scheme, non-motorized travel, and  
20 other emissions reducing strategies.

21           “(vii) Emissions and energy reduction  
22 strategies for freight transportation, in-  
23 cluding mode shifts, freight infrastructure  
24 projects, and the effects of land use on  
25 freight movement.

1           “(3) ADAPTATION.—The Office shall fund or  
2           coordinate research on the impacts of climate change  
3           on surface transportation infrastructure to under-  
4           stand and assess how extreme climate conditions  
5           may affect transportation operation and infrastruc-  
6           ture.

7           “(4) ASSESSMENT.—

8                   “(A) IN GENERAL.—The Office shall as-  
9                   sess current and historical surface transpor-  
10                   tation infrastructure and fuel demand manage-  
11                   ment strategies that have been implemented at  
12                   the local, state, and national levels for their so-  
13                   cial, economic, and environmental costs and  
14                   benefits, and assess the barriers to implementa-  
15                   tion for these demand management strategies.

16                   “(B) PUBLIC ACCESSIBILITY.—The results  
17                   of such assessments shall be made publicly  
18                   available through the Administration’s Web  
19                   site.

20           “(5) MODELING.—The Office, in consultation  
21           with the Environmental Protection Agency and other  
22           Federal agencies, shall support the development of  
23           more accurate tools and models for quantifying mo-  
24           bile emissions and evaluating surface transportation

1 emissions reductions strategies. The tools and mod-  
2 els shall incorporate such factors as—

3 “(A) vehicle speed;

4 “(B) traffic flow;

5 “(C) land use;

6 “(D) nonmotorized travel;

7 “(E) transit use;

8 “(F) traveler behavior; and

9 “(G) commercial traffic and freight move-  
10 ment.

11 “(6) PUBLIC ACCESSIBILITY.—The results of  
12 the research and development carried out under this  
13 subsection shall be made publicly available to na-  
14 tional, state, and local transportation planners and  
15 decision makers.”.

16 **SEC. 6. REGIONAL GREEN TRANSPORTATION RESEARCH**  
17 **CENTERS.**

18 (a) ESTABLISHMENT.—Subchapter I of chapter 55 of  
19 title 49, United States Code, is amended by inserting after  
20 section 5505 following new section:

21 **“SEC. 5505A. REGIONAL GREEN TRANSPORTATION RE-**  
22 **SEARCH CENTERS.**

23 “(a) GREEN TRANSPORTATION INFRASTRUCTURE  
24 RESEARCH AND TECHNOLOGY TRANSFER.—The Adminis-  
25 trator shall make grants to nonprofit institutions of higher

1 learning or consortia thereof to establish and operate uni-  
2 versity transportation centers to carry out research, devel-  
3 opment, and technology transfer activities in the field of  
4 green transportation infrastructure.

5 “(b) OBJECTIVES.—The purpose of centers estab-  
6 lished pursuant to this section shall be to—

7 “(1) generate innovative and cost-effective ap-  
8 proaches to mitigating environmental impacts  
9 throughout the lifecycle of transportation infrastruc-  
10 ture;

11 “(2) develop holistic approaches to integrating  
12 green infrastructure into existing wastewater man-  
13 agement systems;

14 “(3) promote adoption of innovative green  
15 transportation infrastructure systems by State and  
16 local governments and the private sector; and

17 “(4) manage technology transfer programs to  
18 disseminate information on best management prac-  
19 tices in the area of green transportation infrastruc-  
20 ture to State and local governments and the private  
21 sector.

22 “(c) SELECTION OF GRANT RECIPIENTS.—

23 “(1) APPLICATIONS.—In order to be eligible to  
24 receive a grant under this section, a nonprofit insti-  
25 tution of higher learning or consortia thereof shall

1 submit to the Administrator an application that is in  
2 such form and contains such information as the Ad-  
3 ministrator may require.

4 “(2) REGIONAL CENTERS.—To the greatest ex-  
5 tent practicable, the Administrator shall ensure that  
6 there is at least one grant recipient from each of the  
7 10 United States Government regions that comprise  
8 the Standard Federal Regional Boundary System.

9 “(3) SELECTION CRITERIA.—Except as other-  
10 wise provided by this section, the Administrator  
11 shall select each recipient of a grant under this sec-  
12 tion through a merit-reviewed competitive process on  
13 the basis of the following:

14 “(A) Demonstrated expertise in transpor-  
15 tation research and environmental impacts of  
16 transportation infrastructure.

17 “(B) Demonstrated research capacity and  
18 technology transfer resources.

19 “(C) Existing or proposed partnerships  
20 with State and local governments and private  
21 industry involved in transportation-related con-  
22 struction, environmental impact mitigation, or  
23 other areas related to green transportation in-  
24 frastructure research.

1           “(D) Capability to provide leadership in  
2           developing national best management practices,  
3           regional best management practices, or both in  
4           the field of green transportation infrastructure.

5           “(E) Expertise in specific regional climate  
6           characteristics which impact the effectiveness of  
7           green transportation infrastructure technologies  
8           and practices.

9           “(F) Demonstrated ability to disseminate  
10          results of research and education programs  
11          through a statewide or regionwide continuing  
12          education program.

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

15          “(d) ACTIVITIES.—The types of activities the Sec-  
16          retary may support under this section include the fol-  
17          lowing:

18                 “(1) Research and development of innovative  
19                 technologies, construction techniques, or best man-  
20                 agement processes that mitigate the environmental  
21                 impact of transportation infrastructure, including—

22                         “(A) assessments of the lifecycle environ-  
23                         mental impact of local existing or planned  
24                         transportation infrastructure;

1           “(B) integration of green transportation  
2           infrastructure elements into existing transpor-  
3           tation or waste management systems; and

4           “(C) research, development, testing, and  
5           evaluation of new technologies or best manage-  
6           ment practices.

7           “(2) Establishment and operation of a regional  
8           technology transfer program to disseminate informa-  
9           tion on new technologies and best management prac-  
10          tices to State and local governments, institutions of  
11          higher learning, and private industry in the region.

12          “(3) Study of the impact of State, local, and  
13          Federal regulations on the implementation of green  
14          transportation infrastructure technologies and prac-  
15          tices. These studies shall include collaboration with  
16          appropriate Federal agencies to evaluate the effect  
17          of and possible changes to Federal and State regula-  
18          tions that impede implementation of green transpor-  
19          tation infrastructure.

20          “(4) Public education campaigns to raise  
21          awareness of the benefits of green transportation in-  
22          frastructure technologies, including activities to raise  
23          awareness and foster collaboration among regional  
24          governments, private industry, and other public and  
25          private stakeholders.

1       “(e) ANNUAL MEETING.—The Administrator shall  
2 convene an annual meeting of the Centers established pur-  
3 suant to this section in order to foster collaboration and  
4 communication among Center participants and dissemi-  
5 nate best management practices.

6       “(f) DEFINITION.—In this section, the term ‘green  
7 transportation infrastructure’ includes infrastructure  
8 that—

9           “(1) preserves and restores natural processes,  
10 landforms (such as floodplains), natural vegetated  
11 stream side buffers, wetlands, or other topographical  
12 features that can slow, filter, and naturally store  
13 stormwater runoff and floodwaters for future water  
14 supply and recharge of natural aquifers;

15           “(2) utilizes natural design techniques that in-  
16 filtrate, filter, store, evaporate, and detain water  
17 close to its source;

18           “(3) minimizes the use of impervious surfaces  
19 in order to slow or infiltrate precipitation;

20           “(4) minimizes lifecycle energy consumption, in-  
21 cluding during construction, maintenance, use by ve-  
22 hicles, and destruction and recycling; and

23           “(5) minimizes lifecycle air pollution.”.

1 (b) CONFORMING AMENDMENT.—The table of sec-  
2 tions for such subchapter is amended by inserting after  
3 the item relating to section 5505 the following new item:

“5505A. Regional Green Transportation Research Centers.”.

4 **SEC. 7. NATIONAL RESEARCH COUNCIL REVIEW.**

5 The Administrator shall contract with the National  
6 Research Council to conduct a review of the surface trans-  
7 portation research, development, and technology transfer  
8 activities at the Turner Fairbank Highway Research facil-  
9 ity. Such review shall assess the technical merit of re-  
10 search activities at such facility and the degree to which  
11 such activities achieve stated objectives and desired im-  
12 pact.

13 **SEC. 8. PAVEMENT RESEARCH, DEPLOYMENT, AND EDU-  
14 CATION PROGRAM.**

15 (a) ESTABLISHMENT.— The Administrator shall, in  
16 consultation with appropriate Department modal agencies,  
17 establish a pavement research, deployment, and education  
18 program (in this section referred to as the “Program”).

19 (b) PURPOSE.—The purpose of the Program shall be  
20 to—

21 (1) address the need to advance pavement re-  
22 search; and

23 (2) coordinate technology transfer efforts about  
24 paving materials.

1           (c) FUNCTION.—The Program, in coordination with  
2 Department modal agencies, shall provide funding to  
3 UTCs and other institutions of higher education to con-  
4 duct research, development, and technology transfer ac-  
5 tivities about paving materials and practices.

6           (d) ACTIVITIES.—Activities carried out by the Pro-  
7 gram shall include—

8                   (1) research and development of innovative  
9 technologies and techniques to reduce the cost and  
10 environmental impact of paving materials and prac-  
11 tices, including research on—

12                           (A) paving materials with improved dura-  
13 bility;

14                           (B) methods that decrease the energy use  
15 in, and emissions resulting from, paving prac-  
16 tices;

17                           (C) paving materials that decrease environ-  
18 mental impact;

19                           (D) methods to decrease the overall life-  
20 cycle cost of paving materials and practices;

21                           (E) construction techniques to increase  
22 safety and reduce construction time and traffic  
23 disruption and congestion;

24                           (F) pavement evaluation technologies and  
25 techniques; and

1 (G) paving materials utilizing more recy-  
2 cled and locally available natural material;

3 (2) effective technology transfer, including ef-  
4 forts on—

5 (A) identifying and addressing barriers to  
6 implementation for developed paving materials  
7 and practices; and

8 (B) addressing the data needs of stake-  
9 holders by developing independent studies and  
10 assessments on topics, including—

11 (i) durability of paving technologies;

12 (ii) emissions from construction prac-  
13 tices;

14 (iii) life-cycle cost-effectiveness of pav-  
15 ing materials and strategies; and

16 (iv) environmental impact of paving  
17 technologies; and

18 (3) establishing grants to institutions of higher  
19 education to develop training and education pro-  
20 grams for workforce professionals in the areas of  
21 paving materials and practices.

22 (e) REPORT.—Not later than 6 months after the date  
23 of enactment of this Act, the Administrator shall submit  
24 a report to the appropriate Congressional committees on  
25 the results of the long-term pavement performance pro-

1 gram and how the Department intends to organize, main-  
2 tain, and utilize the database.

3 **SEC. 9. DEFINITIONS.**

4 For purposes of this Act, the following definitions  
5 apply:

6 (1) ADMINISTRATION.—The term “Administra-  
7 tion” means the Research and Innovative Tech-  
8 nology Administration in the Department of Trans-  
9 portation.

10 (2) ADMINISTRATOR.—The term “Adminis-  
11 trator” means the Administrator of the Research  
12 and Innovative Technology Administration.

13 (3) APPROPRIATE CONGRESSIONAL COMMIT-  
14 TEES.—The term “appropriate Congressional com-  
15 mittees” means the Committee on Science and Tech-  
16 nology and the Committee on Transportation and  
17 Infrastructure of the House of Representatives and  
18 the Committee on Commerce, Science, and Trans-  
19 portation of the Senate.

20 (4) DEPARTMENT.—The term “Department”  
21 means the Department of Transportation.

22 (5) SECRETARY.—The term “Secretary” means  
23 the Secretary of Transportation.

1           (6) UTC.—The term “UTC” means a univer-  
2           sity transportation center established under section  
3           5506 of title 49, United States Code.

4 **SEC. 10. AUTHORIZATION.**

5           (a) SURFACE TRANSPORTATION RESEARCH, DEVEL-  
6           OPMENT, AND TECHNOLOGY PROGRAM.—To carry out  
7           surface transportation research, development, and tech-  
8           nology activities, such sums as are necessary shall be  
9           available.

10          (b) UNIVERSITY TRANSPORTATION RESEARCH.—To  
11          carry out section 5505 and section 5506 of title 49, United  
12          States Code, such sums as are necessary shall be available.