To authorize surface transportation research and development programs, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mrs. Comstock introduced the following bill; which was referred to the Committee on ______________________

A BILL

To authorize surface transportation research and development programs, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Surface Transportation Research and Development Act of 2015”.

SEC. 2. FINDINGS.

Congress makes the followings findings:

(1) Federal transportation research and development planning and coordination—
(A) should occur within the Office of the Secretary of Transportation; and

(B) should be, to the extent practicable, multimodal and not occur solely within the sub-agencies of the Department of Transportation.

(2) Managing a multimodal research and development portfolio within the Office of the Secretary will—

(A) help identify opportunities where research could be applied across modes; and

(B) prevent duplication of efforts and waste of limited Federal resources.

(3) Increasing transparency of transportation research and development efforts will—

(A) build stakeholder confidence in the final product; and

(B) lead to the improved implementation of research and development findings.

SEC. 3. RESEARCH PLANS AND RESEARCH ABSTRACT DATABASE.

(a) In General.—Not later than May 1 of each year, the head of each modal administration and joint program office of the Department of Transportation shall submit a comprehensive annual research plan for the fiscal year following the upcoming fiscal year to the Assistant
Secretary for Research and Technology of the Department of Transportation (referred to in this section as the “Assistant Secretary”).

(b) Review.—

(1) In general.—Not later than September 1 of each year, the Assistant Secretary, for each plan submitted pursuant to subsection (a), shall—

(A) review the scope of the research; and

(B)(i) approve the plan; or

(ii) request that the plan be revised and resubmitted for approval.

(2) Publications.—Not later than January 30 of each year, the Assistant Secretary shall publish on a public website each plan that has been approved under paragraph (1)(B)(i).

(3) Rejection of duplicative research efforts.—The Assistant Secretary may not approve any plan submitted by the head of a modal administration or joint program office pursuant to subsection (a) if such plan duplicates significant aspects of research projects of any other modal administration.

(e) Funding Limitations.—No funds may be expended by the Department of Transportation on research
that has not previously been approved as part of a re-
search plan approved by the Assistant Secretary unless—

    (1) such research is required by an Act of Con-
gress;

    (2) such research was part of a contract that
was funded before the date of enactment of this Act;

or

    (3) the Secretary of Transportation certifies to
Congress that such research is necessary and pro-
vides justification for the certification.

(d) DUPLICATIVE RESEARCH.—

    (1) IN GENERAL.—Except as provided in para-
graph (2), no funds may be expended by the Depart-
ment of Transportation on more than one research
project that the Assistant Secretary identifies as du-
plicative under subsection (b)(3).

    (2) EXCEPTIONS.—Paragraph (1) shall not
apply to—

        (A) research commissioned before the date
of enactment of this Act;

        (B) updates to previously commissioned re-
search, including replication studies; or

        (C) research specifically required by law.

(e) RESEARCH ABSTRACT DATABASE.—
(1) IN GENERAL.—The Assistant Secretary shall annually publish on a public website a comprehensive database of all research projects conducted by the Department of Transportation, including, to the extent practicable, research funded through University Transportation Centers.

(2) CONTENTS.—The database published under paragraph (1) shall—

(A) include the research plans approved under subsection (b)(1)(B)(i);

(B) describe the research objectives, progress, findings, and allocated funds for each research project;

(C) identify research projects with multimodal applications;

(D) specify how relevant modal administrations have assisted, will contribute to, or plan to use the findings from the research projects identified under paragraph (1);

(E) identify areas in which more than 1 modal administration is conducting research on a similar subject or a subject which has a bearing on more than 1 mode;

(F) describe the interagency and cross-modal communication and coordination that has
occurred to develop the research plans approved under subsection (b)(1)(B)(i), and to prevent duplication of research projects within the Department of Transportation;

(G) indicate how the findings of research are being disseminated to improve the efficiency, effectiveness, and safety of transportation systems; and

(H) describe the specific content and sources of public and stakeholder input to the research plans approved under subsection (b)(1)(B)(i).

(f) FUNDING REPORT.—In conjunction with each of the President’s annual budget requests under section 1105 of title 31, United States Code, the Secretary of Transportation shall submit to Congress and annually publish on a public website a report that describes—

(1) the amount spent in the last completed fiscal year on each transportation research and development project; and

(2) the amount that the Secretary plans or estimates the Department will spend during the current fiscal year on each transportation research and development project.
SEC. 4. TRANSPORTATION RESEARCH AND DEVELOPMENT STRATEGIC PLAN.

(a) IN GENERAL.—The Secretary of Transportation shall develop a 5-year transportation research and development strategic plan for fiscal years 2018 through 2022 to guide future Federal transportation research and development activities.

(b) CONSISTENCY.—The strategic plan developed under subsection (a) shall be consistent with—

(1) section 306 of title 5, United States Code;
(2) sections 1115 and 1116 of title 31, United States Code; and
(3) any other research and development plan within the Department of Transportation.

(c) CONTENTS.—The strategic plan developed under subsection (a) shall—

(1) describe the primary purposes of the transportation research and development program, which shall include—

(A) improving mobility of people and goods;
(B) reducing congestion;
(C) promoting safety; and
(D) improving the durability and extending the life of transportation infrastructure.
(2) for each of the purposes referred to in paragraph (1), list the proposed research and development activities that the Department of Transportation intends to pursue to accomplish that purpose, which may include—

(A) fundamental research pertaining to the applied physical and natural sciences;

(B) applied science and research;

(C) technology development research; and

(D) social science research; and

(3) for each research and development activity—

(A) identify the anticipated annual funding levels for the period covered by the strategic plan; and

(B) describe the research findings the Department of Transportation expects to discover at the end of the period covered by the strategic plan.

(d) CONSIDERATIONS.—The Secretary shall ensure that the strategic plan developed under this section—

(1) reflects input from external stakeholders;

(2) includes and integrates the research and development programs of all of the Department of
Transportation’s modal administrations and joint programs;

(3) takes into account research and development by other Federal, State, local, private sector, and nonprofit institutions; and

(4) is published on a public website by December 31, 2016.

c) Report.—

(1) National Research Council Review.—

The Secretary shall enter into an agreement with the National Research Council for a review and analysis of the Department’s 5-year research and development strategic plan described in this section. By March 31, 2017, the Secretary shall publish on a public website the National Research Council’s analysis of the Department’s plan.

(2) Interim Report.—By June 30, 2019, the Secretary shall publish on a public website an interim report that—

(A) provides an assessment of the Department’s 5-year research and development strategic plan described in this section that includes a description of the extent to which the research and development is or is not successfully
meeting the purposes described under subsection (e)(1); and

(B) addresses any concerns and identifies any gaps that may have been raised by the National Research Council analysis under paragraph (1), including how the plan is or is not responsive to the National Research Council review.

(f) **TECHNICAL AND CONFORMING AMENDMENTS.**—

(1) **CHAPTER 5 OF TITLE 23.**—Chapter 5 of title 23, United States Code, is amended—

(A) by striking section 508;

(B) in the table of contents, by striking the item relating to section 508;

(C) in section 502—

(i) in subsection (a)(9), by striking “transportation research and technology development strategic plan developed under section 508” and inserting “transportation research and development strategic plan under section 4 of the Surface Transportation Research and Development Act of 2015”; and

(ii) in subsection (b)(4), by striking “transportation research and development
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strategic plan of the Secretary developed
under section 508” and inserting “trans-
portation research and development stra-
tegic plan under section 4 of the Surface
Transportation Research and Development
Act of 2015”; and

(D) in section 512(b), by striking “as part
of the transportation research and development
strategic plan developed under section 508”.

(2) INTELLIGENT TRANSPORTATION SYS-
tems.—The Intelligent Transportation Systems Act
of 1998 (23 U.S.C. 502 note) is amended—

(A) in section 5205(b), by striking “as part
of the Surface Transportation Research
and Development Strategic Plan developed
under section 508 of title 23, United States
Code” and inserting “as part of the transpor-
tation research and development strategic plan
under section 4 of the Surface Transportation
Research and Development Act of 2015”; and

(B) in section 5206(e)(2)(A), by striking
“or the Surface Transportation Research and
Development Strategic Plan developed under
section 508 of title 23, United States Code”
and inserting “or the transportation research
and development strategic plan under section 4 of the Surface Transportation Research and Development Act of 2015”.

(3) **Intelligent Transportation System Research.**—Subtitle C of title V of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (23 U.S.C. 512 note) is amended—

(A) in section 5305(h)(3)(A), by striking “the strategic plan under section 508 of title 23, United States Code” and inserting “the 5-year transportation research and development strategic plan under section 4 of the Surface Transportation Research and Development Act of 2015”; and

(B) in section 5307(c)(2)(A), by striking “or the surface transportation research and development strategic plan developed under section 508 of title 23, United States Code” and inserting “or the 5-year transportation research and development strategic plan under section 4 of the Surface Transportation Research and Development Act of 2015”.
SEC. 5. TRAFFIC CONGESTION.

(a) WORKING GROUP.—The Secretary of Transportation shall establish a working group consisting of appropriate representatives from the different modal administrations of the Department of Transportation, chaired by the Assistant Secretary of Transportation for Research and Technology, to design, develop, and propose a program of research on the reduction of traffic congestion.

(b) DUTIES.—The working group established under subsection (a), shall—

(1) establish goals and objectives for the program under this section;

(2) recommend research to accelerate the adoption of transportation management systems that allow traffic to flow in the safest and most efficient manner possible while alleviating current and future traffic congestion challenges;

(3) assess and analyze traffic, transit, and freight data from various sources relevant to efforts to reduce traffic congestion so as to maximize mobility, efficiency, and capacity while decreasing congestion and travel times;

(4) examine the use and integration of multiple data types from multiple sources and technologies, including road weather data, private vehicle (including Global Positioning System) data, arterial and
highway traffic conditions, transit vehicle arrival and
departure times, real time navigation routing, con-
struction zone information, and reports of incidents,
to suggest improvements in effective communication
of such data and information in real time;

(5) study and propose solutions to the traffic
congestion issues on high-traffic roads in the Wash-
ington, D.C. area to alleviate and prevent gridlock in
and around the Nation’s Capital, reflecting its sig-
nificance as the seat of the Federal Government and
headquarters for several critical national security
agencies;

(6) develop and disseminate suggested strate-
gies and solutions to reduce congestion for high-den-
sity traffic regions nationwide; and

(7) collaborate with other relevant Federal
agencies, State and local agencies, industry and in-
dustry associations, and university research centers
to fulfill its goals and objectives.

(c) IDENTIFYING INFORMATION.—The working
group shall ensure that information used pursuant to this
section does not contain identifying information of any in-
dividual.

(d) CONGRESSIONAL NOTIFICATION.—The working
group shall keep the Committee on Science, Space, and
Technology and the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation and the Committee on Environment and Public Works of the Senate apprised of the activities and progress of the working group at least once every 6 months.

(e) REPORT.—Not later than 1 year after the date of enactment of this Act, the working group shall transmit to the Committee on Science, Space, and Technology and the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation and the Committee on Environment and Public Works of the Senate a report on its activities under this section, including a transportation strategy that enables our transportation system in and around Washington, D.C. to provide mobility in the event of an emergency or natural disaster.

SEC. 6. HIGHWAY EFFICIENCY.

(a) STUDY.—

(1) IN GENERAL.—The Assistant Secretary of Transportation for Research and Technology shall examine the impact of pavement durability and sustainability on vehicle fuel consumption, vehicle wear and tear, road conditions, and road repairs.
(2) METHODOLOGY.—In carrying out the study, the Assistant Secretary shall—

(A) conduct a thorough review of relevant peer-reviewed research published during at least the past 5 years;

(B) analyze impacts of different types of pavement on all motor vehicle types, including commercial vehicles;

(C) specifically examine the impact of pavement deformation and deflection; and

(D) analyze impacts of different types of pavement on road conditions and road repairs.

(3) CONSULTATION.—In carrying out the study, the Assistant Secretary shall consult with—

(A) experts from the different modal administrations of the Department of Transportation and from other Federal agencies, including the National Institute of Standards and Technology;

(B) State departments of transportation;

(C) local government engineers and public works professionals;

(D) industry stakeholders; and

(E) appropriate academic experts active in the field.
(b) REPORT.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Assistant Secretary shall publish on a public website the results of the study.

(2) CONTENTS.—The report shall include—

(A) a summary of the different types of pavements analyzed in the study and the impacts of pavement durability and sustainability on vehicle fuel consumption, vehicle wear and tear, road conditions, and road repairs; and

(B) recommendations for State and local governments on best practice methods for improving pavement durability and sustainability to maximize vehicle fuel economy, ride quality, and road conditions and to minimize the need for road and vehicle repairs.

SEC. 7. INTELLIGENT TRANSPORTATION TECHNOLOGIES.

(a) IN GENERAL.—The Assistant Secretary of Transportation for Research and Technology, as part of the Intelligent Transportation Systems research program, with the goal of reducing traffic congestion and vehicle crashes and accelerating testing and research on the introduction of safe, connected, and automated vehicle technology systems, shall—
(1) seek to identify and understand—

   (A) new and innovative vehicle technologies, including active safety technologies, and their safe application in vehicles; and

   (B) emerging vehicle technologies and advanced communications and sensing techniques that may require additional exploration and understanding by the Department of Transportation of how such technologies work alone and in conjunction with other vehicle and relevant nonvehicle technologies;

(2) assess wireless technologies’ capabilities to achieve a deployable system in which vehicles of all types (including automobiles, trucks, motor coaches, transit vehicles, and other fleets), traffic signals, other infrastructure systems, pedestrians, motorcyclists, bicyclists, and mobile devices can interact with and among each other through secure communications, including by conducting rigorous, real-world testing, in cooperation with representatives of the Federal Communications Commission, the National Telecommunications and Information Administration, the automotive, Wi-Fi, cellular, and Intelligent Transportation Systems communities, of viable spectrum sharing technologies that could enable the safe
operation of unlicensed devices, including Wi-Fi, in
the 5.9 GHz band without interfering with con-

(3) assist in the development of cybersecurity
standards in cooperation with relevant modal admin-
istrations of the Department of Transportation and
other Federal agencies, including the National Insti-
tute of Standards and Technology, to help prevent
hacking, spoofing, and disruption of connected and
automated transportation applications among sur-
face transportation vehicles of all types.

(b) REPORT.—Upon completion of the testing de-
scribed in subsection (a)(2), the Secretary of Transpor-
tation shall send to Congress and the Federal Communica-
tions Commission, and publish on a public website, a re-
port identifying any potential signal interference risks to
connected and automated vehicle communications that
may exist due to unlicensed devices, including Wi-Fi, oper-
ating in the 5.9 GHz band, including a determination of
whether such devices can safely operate in the 5.9 GHz
band without creating signal interference that could jeop-
ardize or delay the deployment of an effective connected
and automated vehicle communications system.

(c) ANALYSIS.—In carrying out this section, the As-
sistant Secretary of Transportation for Research and
Technology shall document and analyze the technologies described in subsection (a), and share results of the analysis with the National Highway Traffic Safety Administration annually.

(d) PRIVACY.—In carrying out this section, the Secretary and the Assistant Secretary shall ensure the privacy of individuals.

(e) DEFINITION.—In this section, the term “active safety technologies” means technologies which actively assist drivers or vehicles in preventing or mitigating a crash.

SEC. 8. RAIL SAFETY.

Not later than 1 year after the date of enactment of this Act, the Assistant Secretary of Transportation for Research and Technology shall transmit to Congress a report containing—

(1) the results of a study to examine the state of rail safety technologies and an analysis of whether the passenger, commuter, and transit rail transportation industries are keeping up with innovations in technologies to make rail cars safer for passengers and transport of commerce;

(2) a determination of how much additional time and public and private resources will be required for railroad carriers to meet the positive train
control system implementation requirements under section 20157 of title 49, United States Code; and

(3) an identification of technologies that in whole or in part achieve the safety goals of the positive train control implementation requirements under section 20157 that could be implemented sooner than positive train control systems, along with an analysis of the advantages and disadvantages, including costs, of incorporating those alternative technologies to supplement or substitute for positive train control systems.

SEC. 9. UNIVERSITY TRANSPORTATION CENTERS PROGRAM.

Section 5505 of title 49, United States Code, is amended—

(1) in subsection (a)(2)(B) by inserting “multimodal” before “transportation knowledge”;

(2) in subsection (b)—

(A) by striking paragraph (2) and inserting the following:

“(2) Restrictions.—

“(A) Limitation on applications.—

“(i) In general.—A nonprofit institution of higher education may only submit 1 grant application described in clause (ii)
per fiscal year for each of the transportation centers described under paragraphs (2), (3), and (4) of subsection (c).

“(ii) APPLICATIONS.—Applications referred to in clause (i) are applications submitted by a nonprofit institution of higher education—

“(I) in an individual capacity, not through participation in a consortium of nonprofit institutions of higher education; or

“(II) as the lead institution of a consortium of nonprofit institutions of higher education.

“(B) LIMITATION ON AWARDS.—A nonprofit institution of higher education may not receive in any fiscal year more than 1 grant under paragraphs (2), (3), and (4) of subsection (c) based on applications described in subparagraph (A)(ii) of this paragraph.”; and

(B) in paragraph (4)(B)(iii) by inserting “multimodal” before “transportation problems”; and

(3) in subsection (c)—
(A) in paragraph (1), by striking “the Transportation Research and Innovative Technology Act of 2012” and inserting “the Surface Transportation Research and Development Act of 2015”;

(B) by amending paragraph (3)(E) to read as follows:

“(E) FOCUSED RESEARCH.—

“(i) COMPREHENSIVE TRANSPORTATION SAFETY.—The Secretary shall make a grant to 1 of the 10 regional university transportation centers established under this paragraph for the purpose of furthering the objectives described in subsection (a)(2) in the field of comprehensive transportation safety.

“(ii) TRAFFIC CONGESTION.—The Secretary shall make a separate grant to 1 of the 10 regional university transportation centers established under this paragraph for the purpose of furthering the objectives described in subsection (a)(2) in the field of traffic congestion.”; and

(C) in paragraph (4)—

(i) by striking subparagraph (B); and
(ii) by redesignating subparagraphs (C) and (D) as subparagraphs (B) and (C), respectively.

SEC. 10. PRIZE COMPETITIONS.

Section 502(b)(7) of title 23, United States Code, is amended—

(1) in subparagraph (D)—

(A) by inserting ``(such as www.challenge.gov)'' after ``public website'';

(B) by redesignating clauses (iii) and (iv) as clauses (iv) and (v), respectively;

(C) by inserting after clause (ii) the following:

``(iii) the process for participants to register for the competition;''; and

(D) in clause (iv) (as redesignated by subparagraph (B) of this paragraph), by striking ``prize'' and inserting ``cash prize purse'';

(2) in subparagraph (E), by striking ``prize'' both places it appears and inserting ``cash prize purse'';

(3) by redesignating subparagraphs (F) through (K) as subparagraphs (G) through (L), respectively;
(4) by inserting after subparagraph (E) the following:

“(F) USE OF FEDERAL FACILITIES; CONSULTATION WITH FEDERAL EMPLOYEES.—An individual or entity is not ineligible to receive a cash prize purse under this paragraph as a result of the individual or entity using a Federal facility or consulting with a Federal employee related to the individual or entity’s participation in a prize competition under this paragraph if the same facility or employee is made available to all individuals and entities participating in the prize competition on an equitable basis.”;

(5) in subparagraph (G) (as redesignated by paragraph (3) of this section)—

(A) in clause (i)(I), by striking “competition” and inserting “prize competition under this paragraph”;

(B) in clause (ii)(I)—

(i) by striking “participation in a competition” and inserting “participation in a prize competition under this paragraph”; and
(ii) by striking “competition activities” and inserting “prize competition activities”; and

(C) by adding at the end the following:

“(iii) INTELLECTUAL PROPERTY.—

“(I) PROHIBITION ON REQUIRING WAIVER.—The Secretary may not require a participant to waive claims against the Department arising out of the unauthorized use or disclosure by the Department of the intellectual property, trade secrets, or confidential business information of the participant.

“(II) PROHIBITION ON GOVERNMENT ACQUISITION OF INTELLECTUAL PROPERTY RIGHTS.—The Federal Government may not gain an interest in intellectual property developed by a participant for a prize competition under this paragraph without the written consent of the participant.

“(III) LICENSES.—The Federal Government may negotiate a license for the use of intellectual property de-
veloped by a participant for a prize
competition under this paragraph.”;

(6) in subparagraph (H)(i) (as redesignated by
paragraph (3) of this section), by striking “subpara-
graph (H)” and inserting “subparagraph (I)”;

(7) in subparagraph (I) (as redesignated by
paragraph (3) of this section), by striking “an agree-
ment with a private, nonprofit entity” and inserting
“a grant, contract, cooperative agreement, or other
agreement with a private sector for-profit or non-
profit entity”; 

(8) in subparagraph (J) (as redesignated by
paragraph (3) of this section)—

(A) in clause (i)—

(i) in subclause (I), by striking “the
private sector” and inserting “private sec-
tor for-profit and nonprofit entities, to be
available to the extent provided by appro-
priations Acts”; 

(ii) in subclause (II), by striking “and
metropolitan planning organizations” and
inserting “metropolitan planning organiza-
tions, and private sector for-profit and
nonprofit entities”; and
(iii) in subclause (III), by inserting “for-profit or nonprofit” after “private sector”; 

(B) in clause (ii), by striking “prize awards” and inserting “cash prize purses”; 

(C) in clause (iv)— 

(i) by inserting “competition” after “A prize”; and 

(ii) by striking “the prize” and inserting “the cash prize purse”; 

(D) in clause (v)— 

(i) by striking “amount of a prize” and inserting “amount of a cash prize purse”; 

(ii) by inserting “competition” after “announcement of the prize”; and 

(iii) in subclause (I), by inserting “competition” after “prize”; 

(E) in clause (vi), by striking “offer a prize” and inserting “offer a cash prize purse”; and 

(F) in clause (vii), by striking “cash prizes” and inserting “cash prize purses”; 

(9) in subparagraph (K) (as redesignated by paragraph (3) of this section), by striking “or pro-
viding a prize” and inserting “a prize competition or providing a cash prize purse”; and

(10) in subparagraph (L)(ii) (as redesignated by paragraph (3) of this section)—

(A) in subclause (I), by striking “The Secretary” and inserting “Not later than March 1 of each year, the Secretary”; and

(B) in subclause (II)—

(i) in item (ee), by striking “cash prizes” both places it appears and inserting “cash prize purses”; and

(ii) in item (ee), by striking “agency” and inserting “Department”.