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114TH CONGRESS
1ST SESSION

H. R. 2886

To direct the Secretary of Transportation to establish an Automated and Connected Vehicle Research Initiative, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JUNE 25, 2015

Mr. LIPINSKI introduced the following bill; which was referred to the Committee on Science, Space, and Technology, and in addition to the Committee on Transportation and Infrastructure, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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A BILL

To direct the Secretary of Transportation to establish an Automated and Connected Vehicle Research Initiative, 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 ''Future Transportation Research and Innovation for Prosperity Act'' or the ''Future TRIP Act''.

SEC. 2. AUTOMATED AND CONNECTED VEHICLE RESEARCH INITIATIVE.

(a) IN GENERAL.—The Secretary of Transportation shall establish an Automated and Connected Vehicle Research Initiative to lay the foundation for the broad scale adoption of automated vehicle technology.

(b) CONSULTATION.—In carrying out the Initiative established under subsection (a), the Secretary shall consult with—

(1) the National Highway Traffic Safety Administration;

(2) the Federal Highway Administration;

(3) the Federal Transit Administration;

(4) the Federal Motor Carrier Safety Administration;

(5) the Federal Railroad Administration;

(6) the Department of Energy;

(7) the National Institute of Standards and Technology;

(8) the National Science Foundation;

(9) the Office of Science and Technology Policy of the White House; and

(10) other relevant agencies.

(c) RESPONSIBILITIES.—In carrying out the Initiative under subsection (a), the Secretary shall—

(1) conduct collaborative research with private industry and industry associations, other Federal agencies, State and local agencies, university research centers, a national transportation center selected under Section 5505(c)(2) of title 49, United States Code, and national labs; and

(2) establish automated and connected vehicle technology corridors and related pilot programs.

(d) RESEARCH AGENDA.—The Secretary, in consultation with interested parties, shall establish a research agenda for the research conducted under subsection (c)(1) and programs under subsection (c)(2) that, at a minimum, include—

(1) quantifying the benefits of advanced safety and vehicle connectivity technologies, including vehicle-to-vehicle communication technologies and vehicle-to-infrastructure communication technologies, advanced driver assistance systems, shared-use services, and other connected and automated vehicle technologies and services, on—

(A) transportation system performance categories including highway fatalities and injuries separately for motorized and for non-motorized modes;

(B) traffic congestion;

(C) freight movement;

(D) fuel economy and harmful emissions; and

(E) vehicle miles traveled; and

(2) providing deployment guidance, including for—

(A) the reduction of pedestrian, bicycle, and motorcycle fatalities and injuries;

(B) considerations for existing Federal, State, and local regulations and legal frameworks;

(C) information technology systems and management, including the sharing of public agency traffic information, work zone information, and other transportation data to stimulate innovative new services and products for enhancing safety, fuel efficiency, and quality of life;

(D) funding mechanisms and business models;

(E) mobility for the elderly, disabled, and economically disadvantaged;

(F) transit systems;

(G) cyber-physical security;

(H) human factors; and

(I) intercity and interjurisdictional applications and challenges.

(e) COORDINATION OF RESEARCH.—In conducting the research under subsection (c)(1), the Secretary shall coordinate with representatives from the Federal Communications Commission, the Alliance of Automobile Manufacturers, and the Intelligent Transportation Society of America regarding viable spectrum-sharing technologies that could enable the safe operation of unlicensed devices in the 5850–5925 MHz band (in this section, referred to as the 5.9 GHz band) without interfering with safety-of-life vehicle-to-vehicle communication technologies and vehicle-to-infrastructure communication technologies.

(f) REPORT.—Not later than 1 year after the enactment of this Act, the Secretary shall issue a public report identifying any potential signal interference risks that may exist between unlicensed Wi-Fi devices operating in the 5.9 GHz band.

(g) LETTER.—Not later than 1 year after the enactment of this Act, the Secretary shall send a letter to the Federal Communications Commission, the Committee on Environment and Public Works of the Senate, the Committee on Commerce, Science, and Transportation of the Senate, the Committee on Transportation and Infrastructure of the House of Representatives, and the Committee

on Energy and Commerce of the House of Representatives that contains an explanation of the risks and a determination on whether unlicensed Wi-Fi devices can safely operate in the 5.9 GHz band without creating signal interfere that could jeopardize or delay the deployment of an effective and reliable vehicle-to-vehicle and vehicle-to-infrastructure safety-of-life communications system.

(h) INTELLIGENT TRANSPORTATION SYSTEMS SCIENCE & TECHNOLOGY CENTER.—The Secretary shall establish a competitively selected Intelligent Transportation Systems Science & Technology Center that—

(1) draws on the expertise of researchers from multiple domains to develop intelligent systems capable of perceiving and physically interacting with their environment;

(2) develops methods for extending operator efficiency and safety through machine interaction;

(3) trains the next generation of the transportation workforce in the cross-disciplinary fields of robotics, machine learning, cybersecurity, and engineering;

(4) expands standards, codes, and processes to leverage a new generation of intelligent machines; and

(5) engages in real-world technology deployments and evaluations.

(i) REPORT.—Not later than 2 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Commerce, Science, and Transportation and the Committee on Environment and Public Works of the Senate and the Committee on Transportation and Infrastructure, the Committee on Energy and Commerce, and the Committee on Science, Space, and Technology of the House of Representatives, and make available on the Internet website of the Department of Transportation, a report that—

(1) assesses the organizational readiness of the Department to address connected and automated vehicle technology challenges;

(2) assesses the status of connected and automated transportation technology, applications, and policies developed by public and private entities in the United States and internationally;

(3) defines recommended implementation paths for connected and automated transportation technology, applications, and policies that are based on the analysis described in paragraph (1), and the results of paragraphs (1) through (3); and

(4) includes guidance on the relationship of the proposed deployment of connected and automated vehicles to the national architecture and standards and protocols required under section 517 of title 23, United States Code, that—

(A) is based on cyber-physical security and privacy; and

(B) examines the interaction with other cyber-physical systems.

(j) COORDINATION.—In carrying out this section, the Secretary may enter into agreements with, and seek input from, the National Research Council, the National Institute of Standards and Technology, the National Science Foundation, and the Department of Energy, and shall seek input from ITS America, the American Association of State Highway and Transportation Officials, and industry stakeholders, including nonprofit advocacy groups.

(k) REPORT REVIEW.—The Secretary may enter into agreements with the National Research Council for the review of the report described in subsection (i).

(l) DEFINITIONS.—In this section:

(1) VEHICLE-TO-VEHICLE COMMUNICATION TECHNOLOGY.—The term ''vehicle-to-vehicle communication technology'' means a technology that allows

wireless communication of data between vehicles, including dedicated short range communication.

(2) VEHICLE-TO-INFRASTRUCTURE COMMUNICATION TECHNOLOGY.—The term ''vehicle-to-infrastructure communication technology'' means a technology that allows wireless communication of data between vehicles and infrastructure, including dedicated short range communication.

(3) ADVANCED DRIVER ASSISTANCE SYSTEM.—The term ''advanced driver assistance system'' means a system developed to automate, adapt, or enhance vehicle systems for safer driving and improved functionality.

(4) SHARED-USE SERVICE.—The term ''shared-use service'' means a service that shares transportation resources between users.

SEC. 3. 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''; and

(2) in subsection (b)—

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

''(2) RESTRICTION.—

''(A) LIMITATION.—A nonprofit institution of higher education or the lead institution of a consortium of nonprofit institutions of higher education, as applicable, may only submit one grant application per fiscal year for each of the transportation centers described under paragraphs (2), (3), and (4) of subsection (c).

''(B) EXCEPTION FOR CONSORTIUM MEMBERS THAT ARE NOT LEAD INSTITUTIONS.—Subparagraph (A) shall not apply to a nonprofit institution of higher education that is a member of a consortium of nonprofit institutions of higher education but not the lead institution of such consortium.''; and

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

(3) in subsection (c)(4) by striking subparagraph (B) and redesignating accordingly.

SEC. 4. OFFICE OF SCIENCE AND TECHNOLOGY POLICY WORKING GROUP.

The Director of the Office of Science and Technology Policy shall, to improve the scientific pursuit and research procedures of the Department of Transportation—

(1) convene an interagency working group to assist the Department of Transportation in—

(A) implementing appropriate protocols for the management of research programs;

(B) developing and implementing effective technology transfer methods;

(C) effectively operating intermural research programs, including university transportation centers;

(D) implementing a strategic research and development plan and national research framework; and

(E) identifying appropriate research priorities;

(2) develop procedures to allow the Secretary of Transportation to solicit the support of and identify opportunities to collaborate with other Federal research agencies, national laboratories, and personnel to assist in the effective and efficient pursuit and resolution of research challenges identified by the Secretary; and

(3) submit to Congress, not later than 15 months after the date of enactment of this Act, a report about the effectiveness, adherence to standards and protocols, interagency collaboration, and areas of improvement of Department of Transportation and Governmentwide research on transportation-oriented needs.

SEC. 5. RESEARCH AND TECHNOLOGY DEVELOPMENT AND DEPLOYMENT AMENDMENTS.

(a) ACCELERATED INNOVATION DEPLOYMENT.—Section 503(c)(2)(B) of title 23, United States Code, is amended—

(1) by striking clause (i) and inserting the following:

"(i) establish and carry out demonstration programs and workshops to promote innovations and convene strategic groups of individuals influential in innovation adoption processes;";

(2) in clause (ii) by striking "and" at the end;

(3) in clause (iii) by striking the period at the end and inserting "; and"; and

(4) by adding at the end the following:

"(iv) provide assistance in establishing regional, State, and local technology needs,

such as through frameworks developed in the National Cooperative Highway Research Program Report 750.''.

(b) REAUTHORIZATION OF TECHNOLOGY AND INNOVATION DEPLOYMENT PROGRAM.—Section 503(c)(3)(C) of title 23, United States Code, is amended by striking ''2013 through 2014'' and inserting ''2016 through 2021''.

SEC. 6. STATE PLANNING AND RESEARCH ADDITIONAL PURPOSES.

Section 505(a) of title 23, United States Code, is amended by adding at the end the following:

''(8) Travel for research and technology purposes, including workshops, conferences, and demonstrations.

''(9) Activities and training related to developing a culture of innovation and improving organizational readiness for adoption of innovative technologies, such as award programs recognizing innovative individuals.''.

SEC. 7. BUREAU OF TRANSPORTATION STATISTICS.

(a) TRAVEL DATA INITIATIVE.—The Director of the Bureau of Transportation Statistics shall establish a Travel Data Initiative to expand the existing collection of pas-

senger travel data by addressing the most critical gaps in our knowledge and understanding of passenger travel.

(b) ADVICE.—To identify critical gaps in knowledge and data collection approaches, the Director shall seek advice from—

(1) Department of Transportation advisory committees;

(2) the Advisory Committee on Supply Chain Competitiveness of the Department of Commerce; and

(3) the Transportation Research Board of the National Academies.

(c) PILOT PROGRAM.—

(1) ESTABLISHMENT.—The Director, in coordination with the Office of Freight Management and Operations of the Federal Highway Administration, shall establish a pilot program to evaluate freight fluidity measures.

(2) GOALS.—In carrying out the program, the Director shall—

(A) collect, analyze, and present freight data in a timely and comprehensive manner;

(B) establish reporting methods that work between States and internationally; and

(C) present data with the greatest level of geographic detail that do not compromise confidentiality or statistical reliability.

(3) STAKEHOLDER ENGAGEMENT.—The Director, in coordination with the Department of Commerce and the freight industry, shall define requirements for the pilot program.

(d) ADDITIONAL AUTHORITY.—Section 6302 of title 49, United States Code, is amended by adding at the end the following:

''(d) DECISIONMAKING AUTHORITY.—To ensure ongoing objectivity of the products of the Director, the Director has sole decisionmaking authority in the collection, analysis, and publication of data and statistics for the Bureau to fulfill the purposes of this section, in accordance with Statistical Policy Directive #1 and Statistical Policy Directive #4 of the Office of Management and Budget.

''(e) BUDGET ALLOCATION AUTHORITY.—The Director shall have final authority for the disposition and allocation of the authorized budget of the Bureau to enable fulfillment of the purposes of this section, including all hiring, grants, cooperative agreements, and contracts awarded by the Bureau, including the disposition and allocation of funds paid to the Bureau for cost-reimbursable projects.

''(f) TRANSPORTATION PERFORMANCE MANAGEMENT DATA PROGRAM.—To support States and metropolitan planning organizations in carrying out the performance management requirements of section 150 of title 23, the Director shall coordinate with other modal administrations to create and maintain data sets and data analysis tools for all performance measures, including—

''(1) transportation system resilience;

''(2) multimodal freight connectivity; and

''(3) improved data collection and analysis tools to accommodate performance measures, targets, and related data.

''(g) INFORMATION TECHNOLOGY DECISIONS.—Notwithstanding any other provision of law, the provisions of section 11319 of title 40 shall not apply to the Bureau of Transportation Statistics.''.

SEC. 8. NATIONAL COOPERATIVE FREIGHT TRANSPORTATION RESEARCH PROGRAM.

(a) IN GENERAL.—Chapter 5 of title 23, United States Code, is amended by inserting after section 508 the following:

"SEC. 509. NATIONAL COOPERATIVE FREIGHT TRANSPORTATION RESEARCH PROGRAM.

''(a) ESTABLISHMENT.—The Secretary shall establish and support a national cooperative freight transportation research program.

''(b) AGREEMENT.—The Secretary shall enter into an agreement with the Transportation Research Board of the National Research Council of the National Academies to support and carry out administrative and management activities relating to the governance of the national cooperative freight transportation research program.

''(c) ADVISORY COMMITTEE.—The National Academies shall select an advisory committee consisting of a representative cross-section of freight stakeholders, including the Department of Transportation, other Federal agencies, State transportation departments, local governments, nonprofit entities, academia, the private sector, nonprofit entities, trade associations, transportation coalitions, and other interested parties.

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

''(1) NATIONAL RESEARCH AGENDA.—The advisory committee, in consultation with interested par-

ties, shall recommend a national research agenda for the program. The agenda shall—

''(A) include an emphasis on the safe and efficient transportation and handling of hazardous materials by all modes of transportation;

''(B) include a multiyear strategic plan, recognizing freight research themes and needs identified by the National Freight Advisory Committee established to implement the freight transportation requirements of the MAP–21 and needs identified by the Advisory Committee on Supply Chain Competitiveness of the Department of Commerce;

''(C) be coordinated with the activities, plans, and reports required by sections 5304 and 5305 of title 49, United States Code; and

''(D) be coordinated with the activities, plans, and reports required by section 508 of title 23, United States Code.

''(2) INVOLVEMENT.—Interested parties may—

''(A) submit research proposals to the advisory committee;

''(B) participate in merit reviews of research proposals and peer reviews of research products; and

''(C) receive research results.

''(3) OPEN COMPETITION AND PEER REVIEW OF RESEARCH PROPOSALS.—The National Academies may award research contracts and grants under the program through open competition and merit review conducted on a regular basis.

''(4) RESEARCH COORDINATION.—The National Academies shall ensure that research contracts and grants awarded under this section are not duplicative with research conducted under other cooperative transportation research programs governed by the National Academies, nor with research conducted by the Department of Transportation or any other Federal, State, or local agency.

''(5) EVALUATION OF RESEARCH.—

''(A) PEER REVIEW.—Research contracts and grants under the program may allow peer review of the research results.

''(B) PROGRAMMATIC EVALUATIONS.—The National Academies may conduct periodic programmatic evaluations on a regular basis of research contracts and grants.

''(6) DISSEMINATION OF RESEARCH FINDINGS.—The National Academies shall disseminate research findings to researchers, practitioners, and

decisionmakers, through conferences and seminars, field demonstrations, workshops, training programs, presentations, testimony to government officials, the Internet, publications for the general public, collaboration with the National Transportation Library, and other appropriate means.

''(e) CONTENTS.—The national research agenda required under subsection (d)(1) shall at a minimum include research in the following areas:

''(1) Techniques for measuring, estimating, and quantifying public benefits derived from freight transportation projects.

''(2) Alternative approaches to calculating the contribution of truck and rail traffic to congestion on specific highway segments.

''(3) The feasibility of consolidating origins and destinations for freight movement.

''(4) Methods for incorporating estimates of domestic and international trade entering via all mode points of entry into landside transportation planning.

''(5) The use of technology applications, including to intelligent transportation systems applications, to increase capacity of highway lanes dedicated to truck-only traffic.

''(6) Development of physical and policy alternatives for separating car and truck traffic.

''(7) Means of synchronizing infrastructure improvement projects with freight transportation demand projections.

''(8) The effect of changing patterns of freight movement on transportation planning decisions, including accessible private and public commercial vehicle parking and truck-rail crossings.

''(9) Methods for collecting and sharing robust and timely freight data by all modes to inform transportation planning and operations at the local, regional and State levels.

''(10) Methods to gain local acceptance of freight development, expansion and growth along existing corridors, terminals and ports.

''(11) Workforce development programs to attract more students and the next generation of workers to transportation planning, engineering and operation carriers to improve freight mobility.

''(12) Collaboration across multiple jurisdictions and between public and private sector funding partners to develop, maintain and invest in transportation improvements.

''(13) Impact of the development and transport of new sources of energy on the freight network capacity and performance, as well as the potential for synergistic development of new transportation infrastructure with distribution of energy.

''(14) Funding and financing alternatives for multimodal freight infrastructure development, as well as the cost of inaction on infrastructure needs to system users.

''(15) Other research areas to identify and address emerging and future research needs related to freight transportation by all modes.

''(f) FUNDING.—

''(1) FEDERAL SHARE.—The Federal share of the cost of an activity carried out under this section shall be up to 100 percent.

''(2) USE OF NON-FEDERAL FUNDS.—In addition to using funds authorized for this section, the National Academies may seek and accept additional funding sources from public and private entities capable of accepting funding from the Department of Transportation, States, local governments, nonprofit foundations, and the private sector.

''(3) PERIOD OF AVAILABILITY.—Amounts made available to carry out this section shall remain available until expended.''; and

(b) CONFORMING AMENDMENT.—The analysis for such chapter is amended by inserting after the item relating to section 508 the following new item:

''509. National cooperative freight transportation research program.''.

SEC. 9. COMMERCIAL REMOTE SENSING PRODUCTS AND SPATIAL INFORMATION TECHNOLOGIES.

Section 5506 of SAFETEA–LU (23 U.S.C. 502 note) is amended—

(1) in subsection (a)—

(A) by inserting ''multimodal'' after ''national''; and

(B) by striking ''construction'' and inserting ''safety'';

(2) in subsection (b)(1)—

(A) by inserting ''multimodal'' after ''in national''; and

(B) by striking ''construction'' and inserting ''safety'';

(3) by striking subsection (c) and inserting the following:

''(c) COOPERATION.—The Secretary shall carry out this section in cooperation with—

''(1) the activities at the test ranges established under section 332 of the FAA Modernization and Reform Act of 2012 (49 U.S.C. 40101 note); and

''(2) the Center of Excellence for Unmanned Aerial Systems of the Federal Aviation Administration.''; and

(4) in subsection (d) by striking ''2006 through 2009'' and inserting ''2016 through 2021''.

SEC. 10. TRANSPORTATION RESEARCH AND DEVELOPMENT STRATEGIC PLANNING.

Section 508(a) of title 23, United States Code, is amended—

(1) in paragraph (1) by striking ''the Transportation Research and Innovative Technology Act of 2012'' and inserting ''the Future TRIP Act''; and

(2) in paragraph (3)—

(A) in subparagraph (B) by striking ''and'' at the end;

(B) in subparagraph (C) by striking the period at the end and inserting a semicolon; and

(C) by adding at the end the following:

''(D) provides an outcome-based assessment of previous strategic plans;

''(E) includes a description of current, planned, and strategic future collaborations within the Department, with other Federal agencies, and with international entities; and

''(F) includes an evaluation of the value of research, development, and technology to the nation and the Department's strategic goals.''.

SEC. 11. CENTERS FOR SURFACE TRANSPORTATION EXCELLENCE.

Section 504(h) of title 23, United States Code, is amended—

(1) in paragraph (1) by striking ''The Secretary'' and inserting ''Not later than 6 months after the date of enactment of the Future TRIP Act, the Secretary''; and

(2) in paragraph (2) by striking ''and project finance'' and inserting ''project finance, and intelligent transportation systems''.

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