AMENDMENT IN THE NATURE OF A SUBSTITUTE
TO H.R. 2886
OFFERED BY MR. LIPINSKI OF ILLINOIS

Strike all after the enacting clause and insert the following:

1 SECTION 1. SHORT TITLE.

This Act may be cited as the “Future Transportation Research and Innovation for Prosperity Act” or the “Future TRIP Act”.

2 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 Department of Energy;

(2) the National Institute of Standards and Technology;

(3) the National Science Foundation;
(4) the Office of Science and Technology Policy of the White House; and

(5) other relevant agencies.

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

(1) support and conduct research and development on automated and connected vehicle technologies 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 laboratories; and

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

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

(1) analyzing and modeling 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, including standardization of vehicle and operator certification, distracted driving regulations, and following distance regulations;

(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 considerations, including impacts on Federal, State, and local revenue, and funding mechanisms and agreements that benefit Federal, State, and local agencies;

(E) efficacy and other issues regarding adoption incentives, including access to managed lanes, changes to the New Car Assessment Program, tax incentives, and changes to Corporate Average Fuel Economy standards;

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

(G) transit systems;

(H) cyber-physical security;

(I) human factors; and

(J) intercity and interjurisdictional applications and challenges.

(e) COORDINATION OF RESEARCH AND DEVELOPMENT.—In conducting the research and development under subsection (c)(1), the Secretary shall coordinate with representatives from the Federal Communications Commission, and private sector stakeholders, including industry and nonprofit advocacy groups, 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) SIGNAL INTERFERENCE REPORT.—

(1) REQUIREMENT.—The Secretary, in coordi-
nation with representatives from the Federal Com-
munications Commission and private sector stake-
holders, including industry and nonprofit advocacy
groups, shall issue a public report identifying any
potential signal interference risks to operation of a
licensed dedicated short-range communication device
from unlicensed Wi-Fi devices operating in the 5.9
GHz band.

(2) TIMING.—The report required under para-
graph (1) shall be issued not later than the later
of—

(A) 1 year after the date of enactment of
this Act; or

(B) 1 year after a licensed dedicated short-
range communication device that meets Depart-
ment of Transportation specifications is pre-
sented to the Department.
(g) **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. contributes as appropriate to standards, codes, and processes to leverage a new generation of intelligent machines; and
5. engages in real-world technology deployments and evaluations.

(h) **CONNECTED AND AUTOMATED VEHICLE TECHNOLOGY REPORT.**—Not later than 1 year 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 In-
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) describes efforts and opportunities to coordinate research activities with connected and automated vehicle technology, application, and policy development by public and private entities in the United States and internationally;

(2) includes a 3-year strategic plan for research activities related to connected and automated vehicle technology, applications, and policies; and

(3) includes guidance on how connected and automated vehicles are incorporated into 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.

(i) Assessment.—Not later than 1 year after the date of enactment of this Act, the Comptroller General shall assess the organizational readiness of the Depart-
ment of Transportation to address connected and automated vehicle technology challenges.

(j) COORDINATION.—In carrying out this section, the Secretary may enter into agreements with, and seek input from, the Transportation Research Board of the National Academies, the National Institute of Standards and Technology, the National Science Foundation, and the Department of Energy, and shall seek input from private sector stakeholders, including industry and nonprofit advocacy groups.

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

(l) DEFINITIONS.—In this section:

1. **VEHICLE-TO-VEHICLE COMMUNICATION TECHNOLOGIES.**—The term “vehicle-to-vehicle communication technologies” means technologies that allow wireless communication of data between vehicles, including dedicated short range communication.

2. **VEHICLE-TO-INFRASTRUCTURE COMMUNICATION TECHNOLOGIES.**—The term “vehicle-to-infrastructure communication technologies” means technologies that allow wireless communication of data
between vehicles and infrastructure, including dedicated short range communication.

(3) Advanced driver assistance systems.—The term “advanced driver assistance systems” means systems developed to automate, adapt, or enhance vehicle systems for safer driving and improved functionality.

(4) Shared-use services.—The term “shared-use services” means services that share 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.

(a) IN GENERAL.—To improve the scientific pursuit and research procedures concerning transportation, the Office of Science and Technology Policy shall convene an interagency working group to—

(1) develop within 1 year after the date of enactment of this Act a national transportation research framework;
identify opportunities for coordination among agencies and with universities and the private sector, prioritize these opportunities, and act as the coordinator;

(3) identify, and develop a plan to implement, best practices for moving transportation research results out of the laboratory and into application; and

(4) identify, and develop a plan to address, related workforce development needs.

(b) COLLABORATION AND SUPPORT.—The Secretary of Transportation may solicit the support of and identify opportunities to collaborate with other Federal research agencies and national laboratories to assist in the effective and efficient pursuit and resolution of research challenges identified by the Secretary.

(e) REPORT.—The Secretary of Transportation shall submit to Congress, not later than 15 months after the date of enactment of this Act, a report on the effectiveness, adherence to standards and protocols, and interagency collaboration of Department of Transportation and Government-wide research on transportation-oriented needs, including an identification of areas where improvement is needed.
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 demonstrations 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 defining 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 motorized and nonmotorized roadway user travel data by addressing the most critical gaps in our knowledge and understanding of motorized and nonmotorized roadway user 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) FREIGHT FLUIDITY MEASURES.—Section 502 of title 23, United States Code, is amended by adding at the end the following:

“(d) FREIGHT FLUIDITY MEASURES.—

“(1) IN GENERAL.—The Secretary, in coordination with the Office of Freight Management and Operations of the Federal Highway Administration and the Bureau of Transportation Statistics, shall establish and maintain freight fluidity measures.

“(2) GOALS.—In carrying out the program, the Secretary 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 Secretary, in coordination with the Department of Com-
merce and freight stakeholders, shall define requirements for the 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, publication, and dissemination of data and statistics for the Bureau to fulfill the purposes of this section, in accordance with Statistical Policy Directive No. 1 and Statistical Policy Directive No. 4 of the Office of Management and Budget and any successor directives.

“(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) 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.”.
(e) TRANSPORTATION PERFORMANCE MANAGEMENT DATA PROGRAM.—Section 502 of title 23, United States Code, is further amended by adding at the end the following:

“(e) TRANSPORTATION PERFORMANCE MANAGEMENT DATA PROGRAM.—To support States and metropolitan planning organizations in carrying out the performance management requirements of section 150, the Secretary shall coordinate with modal administrations of the Department and the Bureau of Transportation Statistics 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.”.

SEC. 8. NATIONAL COOPERATIVE FREIGHT TRANSPORTATION RESEARCH PROGRAM.

Section 502 of title 23, United States Code, is further amended by adding at the end the following:

“(f) NATIONAL COOPERATIVE FREIGHT TRANSPORTATION RESEARCH PROGRAM.—
“(1) ESTABLISHMENT.—The Secretary shall establish and support a national cooperative freight transportation research program.

“(2) AGREEMENT.—The Secretary shall enter into an agreement with the Transportation Research Board 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.

“(3) PROGRAM OVERSIGHT COMMITTEE.—The Transportation Research Board of the National Academies shall select a program oversight 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.

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

“(A) NATIONAL RESEARCH AGENDA.—The program oversight committee, in consultation
with interested parties, shall recommend a national research agenda for the program. The agenda shall—

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

“(ii) 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 MAP–21 and needs identified by the Advisory Committee on Supply Chain Competitiveness of the Department of Commerce;

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

“(iv) be coordinated with the activities, plans, and reports required by section 508;

“(v) include an emphasis on workforce development programs to attract more stu-
dents and the next generation of workers
to transportation planning, engineering,
and operation carriers; and

“(vi) include an emphasis on collabo-
ration across multiple jurisdictions and be-
tween public and private sector funding
partners to develop, maintain, and invest
in transportation improvements.

“(B) INVOLVEMENT.—Interested parties
may—

“(i) submit research proposals to the
program oversight committee;

“(ii) participate in merit reviews of re-
search proposals and peer reviews of re-
search products; and

“(iii) receive research results.

“(C) OPEN COMPETITION AND PEER RE-
VIEW OF RESEARCH PROPOSALS.—The Trans-
portation Research Board of the National Acad-
emies may award research contracts and grants
under the program through open competition
and merit review conducted on a regular basis.

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

“(E) Evaluation of research.—

“(i) Peer review.—Research contracts and grants under the program may allow peer review of the research results.

“(ii) Programmatic evaluations.—The Transportation Research Board of the National Academies may conduct periodic programmatic evaluations on a regular basis.

“(F) Dissemination of research findings.—The Transportation Research Board of the National Academies shall ensure that the awardees disseminate research findings to researchers, practitioners, and decisionmakers, through conferences and seminars, field demonstrations, workshops, training programs, presentations, testimony to government offi-
cials, the Internet, publications for the general public, collaboration with the National Transportation Library, and other appropriate means.

“(5) CONTENTS.—The national research agenda required under paragraph (4)(A) shall at a minimum consider research in the following areas:

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

“(B) Approaches to calculating the contribution of truck and rail traffic to congestion on specific highway segments.

“(C) The feasibility of consolidating origins and destinations for freight movement.

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

“(E) The use of technology applications, including to intelligent transportation systems applications, to increase capacity of highway lanes dedicated to truck-only traffic.
“(F) Development of infrastructure alternatives and policy for separating car and truck traffic.

“(G) Means of synchronizing infrastructure improvement projects with freight transportation demand projections.

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

“(I) 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.

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

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

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

“(6) FUNDING.—

“(A) FEDERAL SHARE.—The Federal share of the cost of an activity carried out under this subsection may be up to 100 percent.

“(B) USE OF NON-FEDERAL FUNDS.—In addition to using funds authorized for this subsection, the Transportation Research Board of 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.

“(C) PERIOD OF AVAILABILITY.—Amounts made available to carry out this subsection shall remain available until expended.”.
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) COORDINATION.—The Secretary shall carry out this section in coordination 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”.

September 9, 2015 (10:06 a.m.)
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) assesses progress made towards goals 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) describes the benefit of research, development, and technology to stakeholders and end users.”.