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(Original Signature of Member)

116TH CONGRESS
2D SESSION

H. R.

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

IN THE HOUSE OF REPRESENTATIVES

Ms. Johnson of Texas (for herself and Mr. Lucas) introduced the following bill; which was referred to the Committee on

A BILL

To authorize appropriations to the Department of Transportation for surface transportation research, development, and deployment, 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. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “Surface Transportation Research and Development Act
6 of 2020”.

7 (b) TABLE OF CONTENTS.—The table of contents for
8 this Act is as follows:

Sec. 1. Short title; table of contents.

TITLE I—HIGHWAY TRANSPORTATION RESEARCH

- Sec. 101. Authorization of appropriations.
- Sec. 102. Amendment to Highway Safety Improvement project definition.
- Sec. 103. Behavioral traffic safety cooperative research program.
- Sec. 104. Amendment to the exploratory advanced research program.
- Sec. 105. Amendment to the State Planning and Research Program.
- Sec. 106. Road weather centers of excellence.

TITLE II—MULTIMODAL TRANSPORTATION RESEARCH

- Sec. 201. Authorization of appropriations.
- Sec. 202. Advisory council on transportation statistics.
- Sec. 203. Amendments to the University Transportation Centers Program.
- Sec. 204. Resilient Transportation Infrastructure Centers of Excellence.
- Sec. 205. Transportation Data for Healthy Living Study Pilot.
- Sec. 206. National cooperative freight transportation research program.
- Sec. 207. Heavy Freight Autonomous Trucking Research Corridor.
- Sec. 208. Strategic Transportation Research Program.
- Sec. 209. Advanced transportation research and innovation program.
- Sec. 210. Rail Cooperative Research Program.
- Sec. 211. Multimodal Transportation Demonstration Program.
- Sec. 212. Advisory Council on Transportation Research and Development.
- Sec. 213. Transportation research and development 5-year strategic plan.

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

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

4 (a) IN GENERAL.—The following amounts are au-
5 thORIZED to be appropriated out of the Highway Trust
6 Fund (other than the Mass Transit Account):

7 (1) HIGHWAY SAFETY RESEARCH AND DEVEL-
8 OPMENT.—To carry out section 403 of title 23,
9 United States Code—

10 (A) \$152,000,000 for fiscal year 2021;

11 (B) \$161,880,000 for fiscal year 2022;

12 (C) \$172,402,000 for fiscal year 2023;

13 (D) \$183,608,000 for fiscal year 2024;

14 and

1 (E) \$195,543,000 for fiscal year 2025.

2 (2) HIGHWAY RESEARCH AND DEVELOPMENT
3 PROGRAM.—To carry out sections 503(b) and 520 of
4 title 23, United States Code—

5 (A) \$142,000,000 for fiscal year 2021;

6 (B) \$151,230,000 for fiscal year 2022;

7 (C) \$161,060,000 for fiscal year 2023;

8 (D) \$171,530,000 for fiscal year 2024;

9 and

10 (E) \$182,680,000 for fiscal year 2025.

11 (3) TECHNOLOGY AND INNOVATION DEPLOY-
12 MENT PROGRAM.—To carry out section 503(c) of
13 title 23, United States Code—

14 (A) \$70,000,000 for fiscal year 2021;

15 (B) \$74,550,000 for fiscal year 2022;

16 (C) \$79,396,000 for fiscal year 2023;

17 (D) \$84,556,000 for fiscal year 2024; and

18 (E) \$90,053,000 for fiscal year 2025.

19 (4) ADVANCED TRANSPORTATION AND CONGES-
20 TION MANAGEMENT TECHNOLOGIES DEPLOYMENT
21 PROGRAM.—To carry out section 503(c)(4) of title
22 23, United States Code—

23 (A) \$60,000,000 for fiscal year 2021;

24 (B) \$60,000,000 for fiscal year 2022;

25 (C) \$60,000,000 for fiscal year 2023;

1 (D) \$60,000,000 for fiscal year 2024; and

2 (E) \$60,000,000 for fiscal year 2025.

3 (5) TRAINING AND EDUCATION.—To carry out
4 section 504 of title 23, United States Code—

5 (A) \$27,000,000 for fiscal year 2021;

6 (B) \$28,755,000 for fiscal year 2022;

7 (C) \$30,624,000 for fiscal year 2023;

8 (D) \$32,615,000 for fiscal year 2024; and

9 (E) \$34,735,000 for fiscal year 2025.

10 (6) INTELLIGENT TRANSPORTATION SYSTEMS
11 PROGRAM.—To carry out sections 512 through 518
12 of title 23, United States Code—

13 (A) \$158,000,000 for fiscal year 2021;

14 (B) \$168,270,000 for fiscal year 2022;

15 (C) \$179,208,000 for fiscal year 2023;

16 (D) \$190,856,000 for fiscal year 2024;

17 and

18 (E) \$203,262,000 for fiscal year 2025.

19 (b) APPLICABILITY OF TITLE 23, UNITED STATES
20 CODE.—Funds authorized to be appropriated by sub-
21 section (a) shall—

22 (1) be available for obligation in the same man-
23 ner as if those funds were appropriated under chap-
24 ter 1 of title 23, United States Code, except that the
25 Federal share of the cost of a project or activity car-

1 ried out using those funds shall be 80 percent, un-
2 less otherwise expressly provided by this Act (includ-
3 ing the amendments by this Act) or otherwise deter-
4 mined by the Secretary; and

5 (2) remain available until expended and not be
6 transferable.

7 **SEC. 102. AMENDMENT TO HIGHWAY SAFETY IMPROVE-**
8 **MENT PROJECT DEFINITION.**

9 Section 148(a)(4)(B) of title 23, United States Code,
10 is amended by adding at the end the following:

11 “(xxix) Education.

12 “(xxx) Enforcement.

13 “(xxxi) Research activities.

14 “(xxxii) Cybersecurity.”.

15 **SEC. 103. BEHAVIORAL TRAFFIC SAFETY COOPERATIVE RE-**
16 **SEARCH PROGRAM.**

17 Section 403(f) of title 23, United States Code, is
18 amended—

19 (1) by striking “\$2,500,000” and inserting
20 “\$3,500,000”; and

21 (2) by striking “fiscal year ending before” and
22 all that follows through “December 4, 2015” and in-
23 serting “of fiscal years 2021 through 2025”.

1 **SEC. 104. AMENDMENT TO THE EXPLORATORY ADVANCED**
2 **RESEARCH PROGRAM.**

3 Section 503(b)(6) of title 23, United States Code, is
4 amended to read as follows:

5 “(6) EXPLORATORY ADVANCED RESEARCH.—

6 “(A) IN GENERAL.—The Secretary shall
7 carry out long-term, exploratory advanced re-
8 search activities to develop potentially trans-
9 formational solutions to improve the durability,
10 efficiency, environmental impact, productivity,
11 and safety aspects of highway and intermodal
12 transportation systems, including by—

13 “(i) awarding competitive grants and
14 cooperative agreements to institutions of
15 higher education and other nonprofit re-
16 search organizations;

17 “(ii) leveraging the targeted capabili-
18 ties of the Turner-Fairbank Highway Re-
19 search Center to develop technologies and
20 innovations of national importance; and

21 “(iii) collaborating with other Federal
22 agencies with relevant expertise, including
23 the National Science Foundation, the Na-
24 tional Institute of Standards and Tech-
25 nology, and the Department of Energy.

1 “(B) FUNDING.—From funds made avail-
2 able to carry out this subsection, the Secretary
3 shall obligate \$25,000,000 to carry out this
4 paragraph for each of fiscal years 2021 through
5 2025.”.

6 **SEC. 105. AMENDMENT TO THE STATE PLANNING AND RE-**
7 **SEARCH PROGRAM.**

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

10 “(4) FLEXIBILITY.—In addition to the min-
11 imum expenditures required under paragraph (1), of
12 the sums apportioned to a State under paragraphs
13 (1) through (5) of section 104(b), a State may re-
14 quest, and the Secretary may grant, that such State
15 may use additional funds under such paragraphs for
16 multi-state pooled fund research activities.”.

17 **SEC. 106. ROAD WEATHER CENTERS OF EXCELLENCE.**

18 Chapter 5 of title 23, United States Code, is amended
19 by adding at the end the following:

20 **“SEC. 520. ROAD WEATHER CENTERS OF EXCELLENCE.**

21 “(a) IN GENERAL.—The Secretary, in collaboration
22 with the National Oceanic and Atmospheric Administra-
23 tion and the National Science Foundation, shall carry out
24 a program to make awards to institutions of higher edu-

1 cation or nonprofit research organizations to establish re-
2 gional road weather research and development centers.

3 “(b) PURPOSE.—The purpose of the centers estab-
4 lished using funds under subsection (a) shall be to—

5 “(1) maximize use of available road weather in-
6 formation and technologies;

7 “(2) expand road weather research and develop-
8 ment efforts to enhance roadway safety, mobility,
9 and transportation system efficiency while mini-
10 mizing environmental impacts;

11 “(3) support research and development focused
12 on improving road weather information for auto-
13 mated vehicles and automated transportation sys-
14 tems;

15 “(4) promoting the adoption of road weather in-
16 formation and technologies by Federal, State, and
17 local governments, and private entities; and

18 “(5) foster collaboration among academic re-
19 searchers, the private sector, State and local govern-
20 ments, and nongovernmental organizations, includ-
21 ing transportation, meteorological, and other organi-
22 zations.

23 “(c) ACTIVITIES.—The activities of the program es-
24 tablished in subsection (a) shall include—

25 “(1) supporting research and development to—

1 “(A) integrate existing observational net-
2 works, including mobile and fixed sensor net-
3 works, and data management systems for road
4 weather applications;

5 “(B) improve weather modeling capabilities
6 and forecast tools, such as the road surface and
7 atmospheric interface;

8 “(C) enhance mechanisms for commu-
9 nicating road weather information to users,
10 such as transportation officials and the public;

11 “(D) understand the human and cultural
12 factors in driver decision-making in response to
13 road weather hazards and in response to the de-
14 livery of road weather information; and

15 “(E) integrate road weather technologies
16 into an information infrastructure;

17 “(2) improving coordination of research, devel-
18 opment, testing, and implementation of road weather
19 information technologies and automated vehicle and
20 automated transportation systems technologies;

21 “(3) partnering with private sector entities to
22 promote secure voluntary data sharing for the pur-
23 poses of this section;

24 “(4) supporting implementation of road weather
25 information technology and improved communication

1 of road weather information to the public and other
2 users, including transportation officials, emergency
3 managers and vehicle manufacturers;

4 “(5) improving education and training of road
5 weather information users, such as State and local
6 transportation officials and private sector transpor-
7 tation contractors; and

8 “(6) coordinating with transportation weather
9 research activities in other modes, such as transit,
10 railroad, and aviation.

11 “(d) REQUIREMENTS.—

12 “(1) IN GENERAL.—An institution of higher
13 education or an eligible nonprofit organization (or a
14 consortium thereof) seeking funding under this sub-
15 section shall submit an application to the Secretary
16 at such time, in such manner, and containing such
17 information as the Secretary may require.

18 “(2) APPLICATIONS.—Each application under
19 paragraph (1) shall include a description of—

20 “(A) how the institution of higher edu-
21 cation or eligible nonprofit organization (or con-
22 sortium thereof) will work together with other
23 research institutions, industry partners, and
24 State and local transportation officials to carry
25 out activities described in subsection (c); and

1 “(B) how the institution of higher edu-
2 cation or eligible nonprofit organization (or con-
3 sortium thereof) will promote multidisciplinary
4 research to improve road weather information
5 implementation.

6 “(3) SELECTION AND DURATION.—The Sec-
7 retary, in consultation with National Oceanic and
8 Atmospheric Administration and the National
9 Science Foundation, shall select not less than six re-
10 gional centers that represent diverse geographic re-
11 gions and weather patterns, and to the extent pos-
12 sible be located along major United States transpor-
13 tation corridors. Each center established under this
14 section is authorized to carry out activities for a pe-
15 riod of 5 years, renewable for an additional 5 years
16 at the discretion of the Director.

17 “(e) AUTHORIZATION OF APPROPRIATIONS.—Of the
18 amounts made available by section 101(a)(2) of the Sur-
19 face Transportation Research and Development Act of
20 2020, \$12,000,000 for each of the fiscal years 2021
21 through 2025 shall be made available to carry out this
22 section.”.

1 **TITLE II—MULTIMODAL**
2 **TRANSPORTATION RESEARCH**

3 **SEC. 201. AUTHORIZATION OF APPROPRIATIONS.**

4 (a) UNIVERSITY TRANSPORTATION CENTERS PRO-
5 GRAM.—The following amounts are authorized to be ap-
6 propriated out of the Highway Trust Fund (other than
7 the Mass Transit Account) to carry out section 5505 of
8 title 49, United States Code:

- 9 (1) \$150,000,000 for fiscal year 2021.
10 (2) \$159,750,000 for fiscal year 2022.
11 (3) \$170,134,000 for fiscal year 2023.
12 (4) \$181,192,000 for fiscal year 2024.
13 (5) \$192,970,000 for fiscal year 2025.

14 (b) BUREAU OF TRANSPORTATION STATISTICS.—The
15 following amounts are authorized to be appropriated out
16 of the Highway Trust Fund (other than the Mass Transit
17 Account) to carry out chapter 63 of title 49, United States
18 Code:

- 19 (1) \$35,000,000 for fiscal year 2021.
20 (2) \$35,875,000 for fiscal year 2022.
21 (3) \$36,772,000 for fiscal year 2023.
22 (4) \$37,691,000 for fiscal year 2024.
23 (5) \$38,633,000 for fiscal year 2025.

1 (c) TRANSIT RESEARCH AND DEVELOPMENT.—Sec-
2 tion 5338(a)(2)(G) of title 49, United States Code, is
3 amended to read as follows:

4 “(G) \$35,000,000 for fiscal year 2021,
5 \$35,875,000 for fiscal year 2022, \$36,772,000
6 for fiscal year 2023, \$37,691,000 for fiscal year
7 2024, and \$38,633,000 for fiscal year 2025,
8 shall be available to carry out section 5312;”.

9 (d) NATIONAL COOPERATIVE RAIL RESEARCH PRO-
10 GRAM.—There are authorized to be appropriated to carry
11 out section 24910 of title 49, United States Code,
12 \$5,000,000 for each of fiscal years 2021 through 2025.

13 (e) HAZARDOUS MATERIALS RESEARCH AND DEVEL-
14 OPMENT.—There are authorized to be appropriated to
15 carry out section 5118(c) of title 49, United States Code,
16 \$2,000,000 from the Highway Trust Fund and
17 \$2,000,000 from the General Fund for each of fiscal years
18 2021 through 2025.

19 (f) NATIONAL COOPERATIVE FREIGHT TRANSPOR-
20 TATION RESEARCH PROGRAM.—There are authorized to
21 be appropriated to carry out section 5509 of title 49,
22 United States Code, \$5,000,000 for each of fiscal years
23 2021 through 2025.

1 **SEC. 202. ADVISORY COUNCIL ON TRANSPORTATION STA-**
2 **TISTICS.**

3 Section 6305 of title 49, United States Code, is
4 amended—

5 (1) in subsection (a), by striking “The Direc-
6 tor” and all that follows to the period and inserting
7 “Notwithstanding section 418 of the FAA Reauthor-
8 ization Act of 2018 (Public Law 115–254), not later
9 than 6 months after the date of enactment of this
10 Act, the Director shall establish and consult with an
11 advisory council on transportation statistics.”; and

12 (2) by striking subsection (d)(3).

13 **SEC. 203. AMENDMENTS TO THE UNIVERSITY TRANSPOR-**
14 **TATION CENTERS PROGRAM.**

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

17 (1) in subsection (b)(4)(A), by striking “re-
18 search priorities identified in chapter 65.” and in-
19 serting the following: “following research priorities:

20 (i) Improving the mobility of people
21 and goods.

22 (ii) Reducing Congestion.

23 (iii) Promoting Safety.

24 (iv) Improving the durability and ex-
25 tending the life of transportation infra-

1 structure and the existing transportation
2 system.

3 “(v) Preserving the environment.”;

4 and

5 (2) in subsection (c)—

6 (A) in paragraph (2)—

7 (i) in subparagraph (A), by striking
8 “5” and inserting “10”;

9 (ii) in subparagraph (B)—

10 (I) in clause (i)—

11 (aa) by striking “As a condi-
12 tion” and inserting “Subject to
13 clause (ii), as a condition”;

14 (bb) by striking
15 “\$4,000,000” and inserting
16 “\$6,000,000”; and

17 (cc) by striking
18 “\$2,000,000” and inserting
19 “\$3,000,000”; and

20 (II) in clause (ii) by striking
21 “section 6503(c)” and inserting “sub-
22 section (b)(4)(A)”; and

23 (iii) in subparagraph (C)—

24 (I) by redesignating clause (ii) as
25 clause (iii); and

1 (II) by inserting after clause (i)
2 the following:

3 “(ii) EXCEPTION.—

4 “(I) IN GENERAL.—For fiscal
5 years 2021 and 2022, as a condition
6 of receiving a grant under this para-
7 graph, a grant recipient shall match
8 50 percent of the amounts made avail-
9 able under the grant.

10 “(II) NATIONAL EMERGENCY.—
11 The Secretary may reduce the per-
12 centage of amounts described in
13 clause (i) to not less than 50 percent
14 during a national emergency.”.

15 (iv) by adding at the end the fol-
16 lowing:

17 “(D) REQUIREMENT.—In awarding grants
18 under this section, the Secretary shall award at
19 least 1 grant to a national consortia for each
20 focus area described in subsection (b)(4)(A).”.

21 (B) in paragraph (3)—

22 (i) in subparagraph (C)—

23 (I) in clause (i)—

1 (aa) by striking “As a condi-
2 tion” and inserting “Subject to
3 clause (ii), as a condition”;

4 (bb) by striking
5 “\$3,000,000” and inserting
6 “\$4,500,000”; and

7 (cc) by striking
8 “\$1,500,000” and inserting
9 “\$2,500,000”; and

10 (II) by redesignating clause (ii)
11 as clause (iii); and

12 (III) by inserting after clause (i)
13 the following:

14 “(ii) EXCEPTION.—

15 “(I) IN GENERAL.—For fiscal
16 years 2021 and 2022, as a condition
17 of receiving a grant under this para-
18 graph, a grant recipient shall match
19 50 percent of the amounts made avail-
20 able under the grant.

21 “(II) NATIONAL EMERGENCY.—
22 The Secretary may reduce the per-
23 centage of amounts described in
24 clause (i) to not less than 50 percent
25 during a national emergency.”.

- 1 (ii) by striking subparagraph (E); and
2 (C) in paragraph (4)(A)—
3 (i) by striking “\$2,000,000” and in-
4 sserting “\$3,000,000”;
5 (ii) by striking “\$1,000,000” and in-
6 sserting “\$1,500,000”; and
7 (iii) by striking “20” and inserting
8 “30”.

9 **SEC. 204. RESILIENT TRANSPORTATION INFRASTRUCTURE**
10 **CENTERS OF EXCELLENCE.**

11 (a) IN GENERAL.—Subchapter 1 of title 49, United
12 States Code, is amended by adding at the end the fol-
13 lowing:

14 **“SEC. 5506. RESILIENT TRANSPORTATION INFRASTRUC-**
15 **TURE CENTERS OF EXCELLENCE.**

16 “(a) CENTERS OF EXCELLENCE.—The Secretary
17 shall award grants to establish Centers of Excellence to
18 advance research and development that improves the resil-
19 ience of regions of the United States to natural disasters,
20 extreme weather, and the effects of climate change on
21 modal and multimodal transportation and infrastructure.

22 “(b) ACTIVITIES.—In carrying out this section, the
23 Secretary shall ensure the Centers promote resilient infra-
24 structure through—

1 “(1) development of new design, operations,
2 and maintenance standards that incorporate existing
3 and anticipated impacts of natural disasters, ex-
4 treme weather, and climate change;

5 “(2) development and integration of new mate-
6 rials and technologies into existing and future modal
7 and multimodal transportation infrastructure;

8 “(3) workforce development and training; and

9 “(4) development and dissemination of tools,
10 techniques, and information that informs federal,
11 state, and local government decision making, poli-
12 cies, planning, and investments.

13 “(c) CENTER COORDINATION.—In making awards
14 under subsection (f), the Secretary shall designate one of
15 the Centers to coordinate activities of all five Centers to
16 prevent duplication and promote dissemination of research
17 among awardees.

18 “(d) ELIGIBILITY.—An institution of higher edu-
19 cation as defined by section 102 of the Higher Education
20 Act of 1965 (20 U.S.C. 1002) or a consortium of institu-
21 tions of higher education shall be eligible to receive grants
22 under this program.

23 “(e) LOCATION.—Centers shall be located in diverse
24 geographic regions that experience different natural disas-

1 ters, extreme weather patterns, and climate change im-
2 pacts.

3 “(f) SELECTION CRITERIA.—In awarding a grant,
4 the Secretary shall—

5 “(1) give preference to the recipient’s past per-
6 formance in the activities related to subsection (b);

7 “(2) consider the extent to which an applicant’s
8 proposal would involve participation by local, re-
9 gional, and national stakeholders; and

10 “(3) consider the local, regional, and national
11 impacts of the applicant’s proposal.

12 “(g) USE OF FUNDS.—Funds awarded under this
13 subsection shall be used for—

14 “(1) research and development;

15 “(2) education, workforce development, and
16 outreach; and

17 “(3) technology transfer and commercialization.

18 “(h) FEDERAL SHARE.—The Federal share of a
19 grant under this subsection shall be 50 percent of the
20 costs of establishing and operating the center of excellence
21 and related activities carried out by the grant recipient.

22 “(i) AUTHORIZATION OF APPROPRIATIONS.—

23 “(1) FISCAL YEARS 2021 THROUGH 2025.—

24 There are authorized to be appropriated to the Sec-

1 retary \$50,000,000 for each of the fiscal years 2021
2 through 2025 for grants under this subsection.

3 “(2) AVAILABILITY.—Amounts appropriated
4 pursuant to this paragraph shall remain available
5 until expended.”.

6 (b) CONFORMING AMENDMENT.—The table of sec-
7 tions for such subchapter is amended by adding at the
8 end the following:

 “5506. Resilient Transportation Infrastructure Centers of Excellence.”.

9 **SEC. 205. TRANSPORTATION DATA FOR HEALTHY LIVING**
10 **STUDY PILOT.**

11 (a) IN GENERAL.—Not later than 2 years after the
12 date of enactment of this Act, the Secretary shall publish
13 the results a study for the purpose of informing land use
14 and transportation planning for accessible health, food,
15 education, and other essential services and activities.

16 (b) CONTENTS.—In carrying out the study, the Sec-
17 retary shall collect and analyze data to determine—

18 (1) if individuals travel to essential services and
19 activities;

20 (2) how individuals travel to essential services
21 and activities;

22 (3) how far individuals travel to essential serv-
23 ices and activities; and

1 (4) to the extent practicable, the geographic lo-
2 cation and socioeconomic status of the study partici-
3 pants.

4 (c) GEOGRAPHIC AND SOCIOECONOMIC DIVERSITY;
5 CONSULTATION.—In carrying out the study, the Secretary
6 shall—

7 (1) select geographically diverse areas, including
8 rural, tribal, and urban areas, and socioeconomically
9 diverse populations; and

10 (2) consult with other Federal and State statis-
11 tical agencies with relevant data related to essential
12 services.

13 (d) AUTHORIZATION.—There are authorized to be ap-
14 propriated to carry out the activities of this section
15 \$2,000,000 for each of fiscal years 2021 and 2022.

16 **SEC. 206. NATIONAL COOPERATIVE FREIGHT TRANSPOR-**
17 **TATION RESEARCH PROGRAM.**

18 (a) IN GENERAL.—Chapter 702 of title 49, United
19 States Code, is amended by adding at the end the fol-
20 lowing:

21 **“§ 70205. National cooperative freight transportation**
22 **research program**

23 “(a) ESTABLISHMENT.—Not later than one year
24 after the date of enactment of this Act, the Secretary of
25 Transportation shall establish and support a multimodal

1 national cooperative freight transportation research pro-
2 gram.

3 “(b) AGREEMENT.—Upon establishment of the pro-
4 gram under (a), the Secretary shall enter into an agree-
5 ment with the National Academy of Sciences to support
6 and carry out administrative and management activities
7 relating to the governance of the national cooperative
8 freight transportation research program.

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

16 “(d) GOVERNANCE.—The national cooperative
17 freight transportation research program established under
18 this section may include the following administrative and
19 management elements:

20 “(1) NATIONAL RESEARCH AGENDA.—The advi-
21 sory committee, in consultation with interested par-
22 ties, shall recommend a multi-year national research
23 agenda for the program. At a minimum, the advi-
24 sory committee shall consider—

1 “(A) techniques for estimating and quanti-
2 fying public benefits derived from transpor-
3 tation projects;

4 “(B) methods for incorporating estimates
5 of international trade, originating at both water
6 and land ports, into landside transportation
7 planning;

8 “(C) ways to synchronize infrastructure
9 improvements with freight transportation de-
10 mand, including impacts of e-commerce on
11 freight demand, and strategies for better man-
12 agement;

13 “(D) the effect of changing patterns of
14 freight movement on transportation planning
15 decisions relating to rest areas and implementa-
16 tion of truck parking solutions;

17 “(E) new innovative technologies and tools
18 for data collection, analysis, modeling, routing,
19 and overall management of freight movement;

20 “(F) ways to advance deployment of
21 freight intelligent transportation systems, in-
22 cluding advanced information systems;

23 “(G) methods for developing the outreach
24 tools and incentives to increase the workforce;

1 “(H) new methods and technologies for
2 monitoring and enforcement, including data
3 sharing and harmonization;

4 “(I) new methods and policies for incor-
5 porating freight in urban transportation and
6 land use planning; and

7 “(J) other research areas, including human
8 factors research, to identify and address emerg-
9 ing and future research needs related to freight
10 transportation by all modes.

11 “(2) PROGRAM ADMINISTRATION.—In carrying
12 out the program under this section, the National
13 Academy of Sciences shall ensure, to the maximum
14 extent practicable, that grants and contracts award-
15 ed under this section are selected through open com-
16 petitions and merit review conducted on a regular
17 basis.

18 “(3) DISSEMINATION OF RESEARCH FIND-
19 INGS.—The National Academy of Sciences shall dis-
20 seminate research findings to researchers, practi-
21 tioners, and decisionmakers, including through con-
22 ferences and seminars, field demonstrations, work-
23 shops, presentations, testimony to government offi-
24 cials, the Internet, publications for the general pub-
25 lic, and other appropriate means.

1 “(e) FUNDING.—

2 “(1) USE OF NON-FEDERAL FUNDS.—In addi-
3 tion to using funds authorized for this section, the
4 National Academy of Sciences may seek and accept
5 additional funding from non-Federal sources, includ-
6 ing public and private entities.

7 “(2) PERIOD OF AVAILABILITY.—Amounts
8 made available to carry out this section shall remain
9 available until expended.”.

10 (b) CONFORMING AMENDMENT.—The table of sec-
11 tions for such chapter is amended by adding at the end
12 the following:

“70205. National cooperative freight transportation research program.”.

13 **SEC. 207. HEAVY FREIGHT AUTONOMOUS TRUCKING RE-**
14 **SEARCH CORRIDOR.**

15 (a) IN GENERAL.—Subchapter 1 of chapter 55 of
16 title 49, United States Code, is amended by adding at the
17 end the following:

18 **“§ 5507. Heavy Freight Autonomous Trucking Re-**
19 **search Corridor**

20 “(a) IN GENERAL.—Not later than 1 year after the
21 date of enactment of the Surface Transportation Research
22 and Development Act of 2020, the Secretary of Transpor-
23 tation shall establish a Heavy Freight Autonomous Truck-
24 ing Research Initiative to lay the foundation for the broad
25 scale adoption of autonomous freight trucking.

1 “(b) RESPONSIBILITIES.—In carrying out the Initia-
2 tive established under subsection (a), the Secretary shall—

3 “(1) Support and conduct research and develop-
4 ment on automated and connected freight trucking
5 with private industry, and industry associations,
6 other Federal agencies, State and local Transpor-
7 tation agencies, research universities, and a National
8 Transportation center selected under section
9 5505(c)(2) of title 49, United States Code; and

10 “(2) Support or establish a heavy freight auton-
11 omous trucking research and development corridor
12 and related pilot programs.

13 “(c) RESEARCH AND DEVELOPMENT AGENDA.—The
14 Secretary, in consultation with interested parties, shall es-
15 tablish an agenda for research and development conducted
16 under subsection (b)(1) and the programs described in
17 subsection (b)(2) that at a minimum, include—

18 “(1) analyzing, modeling, and piloting the feasi-
19 bility and benefits of dedicated autonomous trucking
20 corridors, including their impact on—

21 “(A) long Distance Freight movement;

22 “(B) supply chains that are critical to the
23 United States economy;

24 “(C) fuel economy and emissions;

25 “(D) transportation infrastructure;

1 “(E) vehicle miles traveled;

2 “(F) the freight trucking workforce; and

3 “(G) safety, accidents, and fatalities;

4 “(2) providing deployment guidance, including

5 for—

6 “(A) utilization costs models;

7 “(B) cyber-physical security; and

8 “(C) human factors, including training the
9 next generation of the transportation workforce.

10 “(d) ELIGIBILITY.—An institution of higher edu-
11 cation (as defined by section 102 of the Higher Education
12 Act of 1965 (20 U.S.C. 1002)) or a consortium composed
13 of non-profits and institutions of higher education shall
14 be eligible to receive grants under this program.

15 “(e) SELECTION CRITERIA.—In awarding a grant,
16 the Secretary shall—

17 “(1) give preference to the recipient’s past and
18 current collaboration with local and state transpor-
19 tation agencies in activities related to section;

20 “(2) give preference to a recipient whose geo-
21 graphic location offer access to long haul tucking
22 corridors;

23 “(3) consider the extent to which an applicant’s
24 proposal would involve participation by local, re-
25 gional, and national stakeholders; and

1 to fully adapt and integrate advanced technologies and in-
2 novation. The study shall include the following focus
3 areas—

4 “(1) advancing connected and autonomous tech-
5 nologies;

6 “(2) incorporating safety-related technologies;

7 “(3) addressing infrastructure resiliency;

8 “(4) multimodal connectivity;

9 “(5) data gathering of travel behavior, includ-
10 ing the public’s short and long-term responses to
11 transformational technologies;

12 “(6) impacts of private-sector transportation
13 product development on society and the traditional
14 research enterprise;

15 “(7) support for a public-sector culture of
16 transportation innovation and acceleration of feder-
17 ally-funded research into practice, codes, and stand-
18 ards; and

19 “(8) fostering development of transportation
20 educators and transportation professionals.

21 “(b) REPORT.—The National Academies of Sciences,
22 Engineering, and Medicine shall submit a report to Con-
23 gress not later than 2 years after the date of enactment
24 of this Act.”.

1 (b) CONFORMING AMENDMENT.—The table of sec-
2 tions for such subchapter is further amended by adding
3 at the end the following:

“5508. Strategic Transportation Research Program.”.

4 (c) AUTHORIZATION OF APPROPRIATIONS.—There is
5 authorized to be appropriated to carry out this section
6 \$1,500,000 for fiscal year 2021.

7 **SEC. 209. ADVANCED TRANSPORTATION RESEARCH AND IN-**
8 **NOVATION PROGRAM.**

9 (a) IN GENERAL.—Subchapter I of chapter 55 of title
10 49, United States Code, as amended, is further amended
11 by adding at the end the following:

12 **“§ 5509. Advanced Transportation Research and In-**
13 **novation Program**

14 “(a) ESTABLISHMENT; PURPOSES.—The Secretary
15 of Transportation shall establish the Advanced Transpor-
16 tation Research and Innovation Program, to be adminis-
17 tered by the Assistant Secretary of Research and Tech-
18 nology. The purposes of the program shall be to—

19 “(1) support research that addresses the long-
20 term barriers to development of multimodal ad-
21 vanced transportation technologies with the potential
22 to meet the Nation’s long-term safety, competitive-
23 ness, and transportation goals;

24 “(2) support high-risk research and develop-
25 ment to accelerate transformational transportation

1 innovations and make federal investments in emerg-
2 ing technology development;

3 “(3) leverage Federal interagency research
4 mechanisms and the academic research enterprise;

5 “(4) educate and train students in science,
6 technology, engineering, and mathematics fields to
7 conduct research and standards development rel-
8 evant to transportation technologies, materials, sys-
9 tems, operations, processes, and policies; and

10 “(5) fostering collaboration among federal re-
11 searchers and academic researchers.

12 “(b) INTERAGENCY COLLABORATION.—The Sec-
13 retary shall collaborate on, identify, and disseminate with-
14 in the Department, as appropriate, advanced transpor-
15 tation research, development, and other activities of other
16 Federal agencies, including the Office of Science and
17 Technology Policy, the National Science Foundation, the
18 Department of Energy, the National Institute of Stand-
19 ards and Technology, the Department of Homeland Secu-
20 rity, the National Aeronautics and Space Administration,
21 the National Oceanic and Atmospheric Administration,
22 and the Department of Defense to ensure the Depart-
23 ment’s research investments are making the best possible
24 contribution to the Nation’s goals of public health and

1 safety, economic prosperity, national security, and envi-
2 ronmental quality.

3 “(c) RESEARCH GRANTS.—The Secretary may sup-
4 port the purposes of the program and carry out activities
5 described under subsection (a) through—

6 “(1) competitive, merit-based basic research
7 grants to individual investigators and teams of in-
8 vestigators; and

9 “(2) centers of excellence selected through a
10 competitive, merit-based process.

11 “(d) APPLICATION.—

12 “(1) IN GENERAL.—An investigator, team of in-
13 vestigators, or an institution of higher education (or
14 consortium thereof) seeking funding under this sec-
15 tion shall submit an application to the Secretary at
16 such time, in such manner, and containing such in-
17 formation as the Secretary may require.

18 “(2) RESEARCH CENTERS.—Each application
19 under paragraph (1) from an institution of higher
20 education (or consortium thereof) shall include a de-
21 scription of how the Center will promote multidisci-
22 plinary transportation research and development col-
23 laboration.

1 “(e) AUTHORIZATION OF APPROPRIATIONS.—There
2 is authorized to be appropriated to carry out this section
3 \$25,000,000 for each of fiscal years 2021 through 2025.

4 “(f) RESEARCH.—At a minimum, the Secretary shall
5 award 75 percent of awards under this program to
6 projects for basic research.

7 “(g) REVIEW.—Not later than September 30, 2025,
8 the Secretary shall enter into an agreement with the Na-
9 tional Academies to conduct a review of the research and
10 activities carried out under this program and assess
11 whether they are consistent with meeting the purposes de-
12 scribed in subsection (a). Members of the review panel
13 shall represent, at a minimum, multimodal surface trans-
14 portation researchers and practitioners.

15 “(h) REPORT.—Not later than one year after the
16 date of enactment of this Act, and biennially thereafter,
17 the Secretary shall provide to the Committees on Com-
18 merce, Science, and Transportation and Environment and
19 Public Works of the Senate and the Committees on Trans-
20 portation and Infrastructure and Science, Space, and
21 Technology of the House of Representatives a report on
22 implementation of this program and research areas that
23 the program will support.”.

1 (b) CONFORMING AMENDMENT.—The table of sec-
2 tions for such subchapter, as amended, is further amended
3 by adding at the end the following:

“5509. Advanced Transportation Research and Innovation Program”.

4 **SEC. 210. RAIL COOPERATIVE RESEARCH PROGRAM.**

5 Section 24910 of title 49, United States Code is
6 amended—

7 (1) in subsection (c)(3) by striking “2019” and
8 inserting “2025”; and

9 (2) in subsection (e) by striking “2010 through
10 2013” and inserting “2021 through 2025”.

11 **SEC. 211. MULTIMODAL TRANSPORTATION DEMONSTRATION PROGRAM.**

12
13 (a) ESTABLISHMENT.—The Secretary may establish
14 a program for the demonstration of advanced transpor-
15 tation technologies, including autonomous systems, for
16 surface transportation modes, including highways, public
17 transportation, freight, ports, and maritime.

18 (b) PURPOSE.—The purpose of this program is to
19 provide Federal investment in the demonstration of
20 emerging technologies in small and mid-sized communities
21 to achieve the purposes of the national transportation re-
22 search and development program described in section
23 6503 of title 49, United States Code. Activities supported
24 under this section may include data interoperability, mo-
25 bility-on-demand and micro-mobility projects to dem-

1 onstrate first-mile/last-mile transportation, and any other
2 topics as determined by the Secretary. Where appropriate,
3 joint interagency funding for projects is authorized to sup-
4 port multimodal projects.

5 (c) ELIGIBILITY.—Eligible recipients of grants under
6 this program include local transportation organizations
7 and transit agencies serving a population of not more than
8 250,000,000 individuals, including communities of eco-
9 nomic hardship and communities that experience trans-
10 portation equity and accessibility issues.

11 (d) APPLICATION.—

12 (1) IN GENERAL.—An organization seeking
13 funding under this section shall submit an applica-
14 tion to the Secretary at such time, in such manner,
15 and containing such information as the Secretary
16 may require.

17 (2) COLLABORATION.—Each application sub-
18 mitted under this section shall describe how that or-
19 ganization will collaborate, as appropriate, with in-
20 stitutions of higher education, State and local gov-
21 ernments, regional transportation organizations,
22 nonprofit organizations, and private sector entities.

23 (e) AUTHORIZATION.—There is authorized to be ap-
24 propriated to carry out activities under this section
25 \$30,000,000 for each of fiscal years 2021 through 2025.

1 **SEC. 212. ADVISORY COUNCIL ON TRANSPORTATION RE-**
2 **SEARCH AND DEVELOPMENT.**

3 (a) ESTABLISHMENT.—In consultation with the As-
4 sistant Secretary for Research and Technology, the Sec-
5 retary shall establish a surface transportation research
6 and development advisory board.

7 (b) DUTIES.—It shall be the duty of the advisory
8 board to review and make recommendations to the Sec-
9 retary and the Assistant Secretary for Research and Tech-
10 nology for general policy for the Department's surface
11 transportation research and development activities, its or-
12 ganization, its budget and its programs as they relate to
13 national surface transportation policies.

14 (c) MEMBERSHIP.—The Secretary shall appoint not
15 less than 9 members, a majority of whom shall be from
16 institutions of higher education.

17 (d) QUALIFICATIONS.—The persons appointed as
18 members of the advisory board—

19 (1) shall be experts in areas such as federal
20 transportation research and development, engineer-
21 ing, education, climate change, resilient transpor-
22 tation technologies; public-private partnerships; data
23 science; information and communications tech-
24 nologies; and social, behavioral and economic
25 sciences.

1 (2) shall be selected solely on the basis of estab-
2 lished records of distinguished service;

3 (3) shall not be employees of the Federal Gov-
4 ernment; and

5 (4) shall represent multiple surface transpor-
6 tation modes and disciplines of legacy and emerging
7 technologies, materials, and processes.

8 (e) REPORT.—The advisory board established in this
9 section shall make publicly available a biennial report of
10 recommendations made by the advisory board to the Sec-
11 retary and the Assistant Secretary for Research and Tech-
12 nology and any such additional reports the advisory board
13 deems necessary.

14 **SEC. 213. TRANSPORTATION RESEARCH AND DEVELOP-**
15 **MENT 5-YEAR STRATEGIC PLAN.**

16 Section 6503 of title 49, United States Code, is
17 amended—

18 (1) in subsection (a), by striking “The Sec-
19 retary” and inserting “For the period of fiscal years
20 2017 through 2021, and for each 5-year period
21 thereafter, the Secretary”;

22 (2) in subsection (c)(1), by amending subpara-
23 graph (F) to read as follows:

24 “(F) developing and maintaining a diverse
25 workforce in transportation sectors;” and

1 (3) in subsection (d), by striking “not later
2 than December 31, 2016,” and inserting “not later
3 than December 31, 2021,”.