

117TH CONGRESS
1ST SESSION

H. R. 1089

To establish a program to provide grants to eligible entities to deploy, install, and operate advanced transportation technologies, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 18, 2021

Mr. BALDERSON (for himself, Mr. GIBBS, and Mr. GRAVES of Louisiana) introduced the following bill; which was referred to the Committee on Transportation and Infrastructure

A BILL

To establish a program to provide grants to eligible entities to deploy, install, and operate advanced transportation technologies, 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.**

4 This Act may be cited as the “Strengthening Methods
5 to Advance Research and Technology in Transportation
6 Act” or the “SMART Transportation Act”.

1 **SEC. 2. ADVANCED TRANSPORTATION TECHNOLOGIES**
2 **PROGRAM.**

3 (a) IN GENERAL.—Chapter 5 of title 23, United
4 States Code, is amended by adding at the end the fol-
5 lowing:

6 **“§ 520. Advanced transportation technologies pro-**
7 **gram**

8 “(a) IN GENERAL.—The Secretary of Transportation
9 shall establish a program to provide grants to eligible enti-
10 ties to deploy, install, and operate advanced transportation
11 technologies to improve safety, efficiency, system perform-
12 ance, mobility, intermodal connectivity, and infrastructure
13 return on investment.

14 “(b) CRITERIA.—In carrying out the program under
15 subsection (a), the Secretary shall develop criteria for se-
16 lection of an eligible entity to receive a grant, including
17 how the proposed deployment of technology—

18 “(1) reduces costs and improves return on in-
19 vestments, including through the optimization of ex-
20 isting transportation capacity;

21 “(2) delivers environmental benefits by alle-
22 viating congestion and streamlining traffic flow;

23 “(3) measures and improves the operational
24 performance of the applicable transportation net-
25 work;

1 “(4) reduces the number and severity of traffic
2 accidents and increases driver, passenger, and pedes-
3 trian safety;

4 “(5) collects, disseminates, and uses informa-
5 tion on real-time traffic, work zone, weather, transit,
6 paratransit, parking, and other transportation-re-
7 lated information to improve mobility, reduce con-
8 gestion, and provide for more efficient, accessible,
9 and integrated transportation and transportation
10 services;

11 “(6) monitors transportation assets to improve
12 infrastructure management, reduce maintenance
13 costs, prioritize investment decisions, and ensure a
14 state of good repair;

15 “(7) delivers economic benefits by reducing
16 delays, improving system performance, and providing
17 for the efficient and reliable movement of goods and
18 services; or

19 “(8) accelerates the deployment of vehicle-to-ve-
20 hicle, vehicle-to-infrastructure, autonomous vehicles,
21 and other technologies.

22 “(c) APPLICATIONS.—An application submitted for a
23 project to be carried out by a grant under this program
24 shall include the following:

1 “(1) A plan to deploy and provide for the long-
2 term operation and maintenance of advanced trans-
3 portation technologies to improve safety, efficiency,
4 system performance, and return on investment.

5 “(2) Objectives for quantifiable system perform-
6 ance improvements, such as—

7 “(A) reducing traffic-related accidents,
8 congestion, and costs;

9 “(B) optimizing system efficiency; and

10 “(C) improving access to transportation
11 services.

12 “(3) Quantifiable safety, mobility, and environ-
13 mental benefit projections such as data-driven esti-
14 mates of how the project proposes to improve the
15 applicable transportation system efficiency and how
16 such project proposes to reduce traffic congestion.

17 “(4) A plan for any partnerships with private
18 sector entities or public agencies, including
19 multimodal and multijurisdictional entities, research
20 institutions, organizations representing transpor-
21 tation and technology leaders, or other transpor-
22 tation stakeholders.

23 “(5) A plan to leverage and optimize existing
24 local and regional advanced transportation tech-
25 nology investments.

1 “(d) GRANT SELECTION.—

2 “(1) GRANT AWARDS.—Each fiscal year for
3 which funding is made available under this section,
4 the Secretary shall award grants to not less than 5
5 and not more than 10 eligible entities.

6 “(2) GEOGRAPHIC DIVERSITY.—

7 “(A) IN GENERAL.—Subject to subpara-
8 graph (B), in awarding a grant under this sec-
9 tion, the Secretary shall ensure, to the extent
10 practicable, that grant recipients represent di-
11 verse geographic areas of the United States, in-
12 cluding urban areas and rural areas.

13 “(B) RURAL SET-ASIDE.—Not less than 20
14 percent of the amounts made available to carry
15 out this section shall be reserved for projects
16 serving rural areas, to the extent there are suf-
17 ficient eligible applications.

18 “(3) TECHNOLOGY DIVERSITY.—In awarding a
19 grant under this section, the Secretary shall ensure,
20 to the extent practicable, that grant recipients rep-
21 resent a variety of technology solutions.

22 “(e) USE OF GRANT FUNDS.—A grant recipient may
23 use funds awarded under this section to deploy advanced
24 transportation technologies, including—

25 “(1) advanced traveler information systems;

1 “(2) advanced transportation management tech-
2 nologies;

3 “(3) advanced transportation technologies to
4 improve emergency evacuation and response by Fed-
5 eral, State, and local authorities;

6 “(4) infrastructure maintenance, monitoring,
7 and condition assessment;

8 “(5) advanced public transportation systems;

9 “(6) transportation system performance data
10 collection, analysis, and dissemination systems;

11 “(7) advanced safety systems, including vehicle-
12 to-vehicle, vehicle-to-pedestrian, and vehicle-to-infra-
13 structure communications, technologies associated
14 with autonomous vehicles, and other collision avoid-
15 ance technologies, including systems using cellular
16 technology;

17 “(8) integration of intelligent transportation
18 systems with the Smart Grid and other energy dis-
19 tribution and charging systems;

20 “(9) integrated corridor management systems;

21 “(10) advanced parking reservation or variable
22 pricing systems;

23 “(11) electronic pricing, toll collection, and pay-
24 ment systems;

1 “(12) technology that enhances high occupancy
2 vehicle toll lanes, cordon pricing, or congestion pricing;
3

4 “(13) advanced mobility and access technologies, such as dynamic ridesharing and information systems to support human services for elderly and disabled individuals;

8 “(14) technology that collects and maintains automated driving system safety data and data analysis tools;

11 “(15) cybersecurity protection measures and activities to protect against cybersecurity threats; or

13 “(16) advanced vulnerable road user safety information systems.

15 “(f) REPORT TO SECRETARY.—

16 “(1) IN GENERAL.—The Secretary shall ensure
17 that a recipient of a grant under this section submits, not later than 1 year after the recipient receives a grant and annually thereafter, a report to
18 the Secretary that describes—
19

21 “(A) deployment and operational costs of
22 the project compared to the benefits and savings the project provides; and
23

1 “(B) how the project has met the original
2 expectations projected in the deployment plan
3 submitted with the application, such as—

4 “(i) data on how the project has
5 helped reduce traffic accidents, congestion,
6 costs, and other benefits of the deployed
7 systems;

8 “(ii) data on the effect of measuring
9 and improving transportation system per-
10 formance through the deployment of ad-
11 vanced transportation technologies;

12 “(iii) the effectiveness of providing
13 real-time integrated traffic, transit, and
14 multimodal transportation information to
15 the public to make informed travel deci-
16 sions; and

17 “(iv) lessons learned and rec-
18 ommendations for future deployment strat-
19 egies to optimize transportation mobility,
20 efficiency, and multimodal system perform-
21 ance.

22 “(2) REPORT CONSISTENCY.—

23 “(A) ADMINISTRATION.—The Secretary
24 shall provide grant recipients with methods and
25 techniques to support consistent data collection

1 across grant recipients and may update such
2 methods and techniques as appropriate.

3 “(B) UPDATE.—The Secretary shall pro-
4 vide grant recipients notice of an update de-
5 scribed in subparagraph (A) not less than 90
6 days before carrying out such update.

7 “(g) REPORT.—Not later than 2 years after the date
8 of enactment of this section, and once every 2 years there-
9 after, the Secretary shall make available to the public on
10 the website of the Department of Transportation an up-
11 dated report that describes the effectiveness of grant re-
12 cipients in meeting projected deployment plans including
13 data described in subsection (f) on how the program has—

14 “(1) reduced traffic-related fatalities and inju-
15 ries;

16 “(2) reduced traffic congestion and improved
17 travel time reliability;

18 “(3) reduced transportation-related emissions;

19 “(4) optimized multimodal system performance;

20 “(5) improved access to transportation alter-
21 natives;

22 “(6) provided the public with access to real-time
23 integrated traffic, transit, and multimodal transpor-
24 tation information to make informed travel deci-
25 sions;

1 “(7) provided cost savings to transportation
2 agencies, businesses, and the traveling public; or

3 “(8) provided other benefits to transportation
4 users and the general public.

5 “(h) PENALTY.—The Secretary may terminate a
6 grant provided under this section and deobligate funds
7 provided by such grant if—

8 “(1) the Secretary determines from a report
9 submitted pursuant to subsection (f) that a recipient
10 of such grant is not carrying out the requirements
11 of the grant; and

12 “(2) the Secretary provides written notice to
13 the Committees on Transportation and Infrastruc-
14 ture and Science, Space, and Technology of the
15 House of Representatives and the Committees on
16 Environment and Public Works and Commerce,
17 Science, and Transportation of the Senate 60 days
18 prior to deobligating funds under this subsection.

19 “(i) FUNDING.—Of the amounts provided to carry
20 out this section, the Secretary may set aside \$2,000,000
21 each fiscal year for program reporting, evaluation, and ad-
22 ministrative costs related to this section.

23 “(j) FEDERAL SHARE.—The Federal share of the
24 cost of a project for which a grant is awarded under this

1 subsection shall not exceed 50 percent of the cost of the
2 project.

3 “(k) GRANT LIMITATION.—The Secretary may not
4 award more than 15 percent of the amount described
5 under subsection (i).

6 “(l) EXPENSES FOR GRANT RECIPIENTS.—A grant
7 recipient under this section may use not more than 5 per-
8 cent of the funds awarded each fiscal year to carry out
9 planning and reporting requirements.

10 “(m) GRANT FLEXIBILITY.—

11 “(1) IN GENERAL.—If, by August 1 of each fis-
12 cal year, the Secretary determines that there are not
13 enough grant applications that meet the require-
14 ments described in subsection (c) to carry out this
15 section for a fiscal year, the Secretary shall transfer
16 to the programs specified in paragraph (2)—

17 “(A) any of the funds reserved for the fis-
18 cal year under subsection (i) that the Secretary
19 has not yet awarded under this section; and

20 “(B) an amount of obligation limitation
21 equal to the amount of funds that the Secretary
22 transfers under subparagraph (A).

23 “(2) PROGRAMS.—The programs referred to in
24 paragraph (1) are—

1 “(A) the programs under sections 503(b)
2 and 503(c); and

3 “(B) the programs under sections 512
4 through 518.

5 “(3) DISTRIBUTION.—Any transfer of funds
6 and obligation limitation under paragraph (1) shall
7 be divided among the programs referred to in that
8 paragraph in the same proportions as the Secretary
9 originally reserved funding from the programs for
10 the fiscal year under subsection (i).

11 “(n) DEFINITIONS.—In this section, the following
12 definitions apply:

13 “(1) ADVANCED TRANSPORTATION TECH-
14 NOLOGIES.—The term ‘advanced transportation
15 technologies’ means technologies that improve the ef-
16 ficiency, safety, or state of good repair of surface
17 transportation systems, including intelligent trans-
18 portation systems.

19 “(2) ELIGIBLE ENTITY.—The term ‘eligible en-
20 tity’ means a State or local government, a transit
21 agency, metropolitan planning organization, or a po-
22 litical subdivision of a State or local government, a
23 multijurisdictional group, a public academic institu-
24 tion, public research institution, or a consortia of re-
25 search institutions or academic institutions.

1 “(3) MULTIJURISDICTIONAL GROUP.—The term
2 ‘multijurisdictional group’ means any combination of
3 State governments, local governments, metropolitan
4 planning organizations, transit agencies, or other po-
5 litical subdivisions of a State for which each member
6 of the group—

7 “(A) has signed a written agreement to
8 implement a project carried out under this sec-
9 tion across jurisdictional boundaries; and

10 “(B) is an eligible entity under this sec-
11 tion.

12 “(4) SMART GRID.—The term ‘Smart Grid’
13 means a system that provides for any of the smart
14 grid functions set forth in section 1306(d) of the
15 Energy Independence and Security Act of 2007 (42
16 U.S.C. 17386(d)).”.

17 (b) CLERICAL AMENDMENT.—The analysis for chap-
18 ter 5 of title 23, United States Code, is amended by add-
19 ing at the end the following new item:

 “520. Advanced transportation technologies program.”.

20 (c) CONFORMING AMENDMENT.—Chapter 5 of title
21 23, United States Code, is amended by striking section
22 503(c)(4).

1 **SEC. 3. CONNECTED VEHICLE DEPLOYMENT PILOT PRO-**
2 **GRAM.**

3 (a) IN GENERAL.—Chapter 5 of title 23, United
4 States Code, is amended by adding at the end the fol-
5 lowing:

6 **“§ 521. Connected vehicle deployment pilot program**

7 “(a) ESTABLISHMENT.—

8 “(1) IN GENERAL.—The Secretary of Transpor-
9 tation shall establish a connected vehicle deployment
10 pilot program to make grants, on a competitive
11 basis, to spur operational deployments to meet the
12 transportation needs of eligible entities through the
13 use of the best available and emerging intelligent
14 transportation systems.

15 “(2) GOALS.—The goals of the program shall
16 be to—

17 “(A) spur connected vehicle technology de-
18 ployment through wirelessly connected vehicles
19 that interact with a connected environment, in-
20 cluding mobile devices, infrastructure, and
21 other elements;

22 “(B) realize safety, mobility, and environ-
23 mental impacts through operational deploy-
24 ments;

25 “(C) capture and use new forms of con-
26 nected vehicle and mobile device data to support

1 improved surface transportation system per-
2 formance and enhanced performance-based
3 management;

4 “(D) encourage partnerships of multiple
5 stakeholders (including private companies,
6 State and local agencies, transit agencies, com-
7 mercial vehicle operators, freight shippers, and
8 transportation network companies);

9 “(E) deploy applications using data cap-
10 tured from multiple sources (including vehicles,
11 mobile devices, and infrastructure) across all
12 elements of the surface transportation system
13 (including transit, highway, arterial highways,
14 parking facilities, and toll highways); and

15 “(F) support deployment sites that create
16 foundations for future expanded and enhanced
17 deployments.

18 “(b) GRANT AMOUNT.—Each grant made under this
19 section shall be in an amount that is at least \$10,000,000.

20 “(c) ELIGIBLE ENTITIES.—The Secretary may make
21 a grant under this section to any of the following entities:

22 “(1) A State or a group of States.

23 “(2) A transit agency.

1 “(3) A metropolitan planning organization that
2 serves an urbanized area with a population of more
3 than 200,000 individuals.

4 “(4) A unit of local government or a group of
5 local governments.

6 “(5) A political subdivision of a State or local
7 government.

8 “(6) A special purpose district or public author-
9 ity with a transportation function, including a port
10 authority.

11 “(7) A multijurisdictional group (as defined
12 under section 520) or a consortia of research institu-
13 tions or academic institutions.

14 “(d) ELIGIBLE PROJECTS.—A grant recipient may
15 use funds awarded under this section for a project that
16 deploys connected vehicle applications and technologies,
17 including—

18 “(1) advanced safety systems, including vehicle-
19 to-vehicle and vehicle-to-infrastructure communica-
20 tions, technologies associated with autonomous vehi-
21 cles, and other collision avoidance technologies, in-
22 cluding systems using cellular technology;

23 “(2) integration of intelligent transportation
24 systems with the Smart Grid and other energy dis-
25 tribution and charging systems;

1 “(3) electronic pricing and payment systems;

2 “(4) advanced mobility and access technologies,
3 such as dynamic ridesharing and information sys-
4 tems to support human services for elderly and dis-
5 abled individuals; and

6 “(5) any deployment concept eligible, before the
7 date of enactment of this section, under the con-
8 nected vehicle pilot deployment program carried out
9 by the Department of Transportation.

10 “(e) USE OF FUNDS.—Grant amounts received for
11 a project under this section may be used for—

12 “(1) activities in the development phase, includ-
13 ing planning, feasibility analysis, revenue fore-
14 casting, environmental review process (as defined
15 under section 139), preliminary engineering and de-
16 sign work, and other preconstruction activities;

17 “(2) construction, reconstruction, rehabilitation,
18 acquisition of real property (including land related
19 to the project and improvements to the land), envi-
20 ronmental mitigation, construction contingencies, ac-
21 quisition of equipment, and operational improvement
22 directly related to improving system performance;

23 “(3) providing incentives to attract driver par-
24 ticipation; and

1 “(4) purchasing and installing any connected
2 vehicle equipment (including vehicle applications,
3 roadside units, and back-office equipment).

4 “(f) APPLICATIONS.—

5 “(1) IN GENERAL.—To be eligible for a grant
6 under this section, an entity described under sub-
7 section (c) shall submit to the Secretary an applica-
8 tion in such form, at such time, and containing such
9 information as the Secretary determines is appro-
10 priate, including—

11 “(A) a plan to deploy and provide for the
12 long-term operation and maintenance of con-
13 nected vehicle technologies to improve safety,
14 efficiency, and system performance;

15 “(B) objectives to improve and measure
16 system performance in 1 or more of—

17 “(i) system productivity;

18 “(ii) mobility, including impact on
19 freight movements;

20 “(iii) livability and accessibility of
21 goods, services, and activities;

22 “(iv) environment and fuel use; and

23 “(v) traveler and system safety, in-
24 cluding advising individuals of potentially
25 unsafe conditions and mitigating the im-

1 pact of events that may cause vehicle acci-
2 dents; and

3 “(C) a plan for partnering with private
4 sector entities or public agencies, including
5 multimodal and multijurisdictional entities, re-
6 search institutions, organizations representing
7 transportation and technology leaders, or other
8 transportation stakeholders.

9 “(2) CRITERIA.—When evaluating applications
10 under this section, the Secretary may not require
11 that a pilot deployment under the program be based
12 on research carried out or funded by the Depart-
13 ment of Transportation.

14 “(g) GRANT SELECTION.—

15 “(1) GRANT AWARDS.—Not later than 1 year
16 after the date of enactment of this section, and each
17 fiscal year thereafter, the Secretary shall award
18 grants to not less than 3 and not more than 5 eligi-
19 ble entities described in subsection (c).

20 “(2) GEOGRAPHIC DIVERSITY.—In awarding a
21 grant under this section, the Secretary shall ensure,
22 to the extent practicable, that grant recipients rep-
23 resent diverse geographic areas of the United States,
24 including urban areas and rural areas.

1 “(h) GRANT MANAGEMENT.—In carrying out the
2 grant program under this section, the Secretary shall—

3 “(1) emphasize project sustainability and long-
4 term funding goals;

5 “(2) create a noncompetitive environment and
6 encourage collaboration among project sites;

7 “(3) balance the privacy of users and secure op-
8 erations of pilot projects, while maintaining the abil-
9 ity to measure performance factors; and

10 “(4) be wary of technological maturity of con-
11 nected vehicle applications and impact of long-term
12 viability of non-deployment ready applications.

13 “(i) SMART GRID DEFINED.—In this section, the
14 term ‘Smart Grid’ means a system that provides for any
15 of the smart grid functions set forth in section 1306(d)
16 of the Energy Independence and Security Act of 2007 (42
17 U.S.C. 17386(d)).”.

18 (b) CLERICAL AMENDMENT.—The analysis for chap-
19 ter 5 of title 23, United States Code, is amended by add-
20 ing at the end the following new item:

“521. Connected vehicle deployment pilot program.”.

21 **SEC. 4. AUTOMATED DRIVING SYSTEM DEMONSTRATION**
22 **PROGRAM.**

23 (a) IN GENERAL.—Chapter 5 of title 23, United
24 States Code, is amended by adding at the end the fol-
25 lowing:

1 **“§ 522. Automated driving system demonstration pro-**
2 **gram**

3 “(a) ESTABLISHMENT.—

4 “(1) IN GENERAL.—The Secretary of Transpor-
5 tation shall establish an automated driving system
6 demonstration program to make grants, on a com-
7 petitive basis, to eligible entities to—

8 “(A) test the safe integration of automated
9 driving system technologies into the on-road
10 transportation system of the United States and
11 demonstrate how challenges to the safe integra-
12 tion of such technologies can be addressed;

13 “(B) ensure significant data gathering and
14 sharing of project data to identify—

15 “(i) a baseline of safety metrics need-
16 ed to characterize the safety risk of inte-
17 grating automated driving system tech-
18 nologies into the transportation system;

19 “(ii) a baseline for the safety of auto-
20 mated driving system technology integra-
21 tion; and

22 “(iii) a baseline of roadway character-
23 istics needed for the safe and efficient op-
24 eration of automated driving system tech-
25 nologies; and

1 “(C) encourage collaboration and partner-
2 ships of multiple stakeholders to carry out sub-
3 paragraphs (A) and (B).

4 “(b) ELIGIBLE ENTITIES.—The Secretary may make
5 a grant under this section to the following:

6 “(1) A State or a group of States.

7 “(2) A transit agency.

8 “(3) A metropolitan planning organization that
9 serves an urbanized area with a population of more
10 than 200,000 individuals.

11 “(4) A unit of local government or a group of
12 local governments.

13 “(5) A political subdivision of a State or local
14 government.

15 “(6) A special purpose district or public author-
16 ity with a transportation function, including a port
17 authority.

18 “(7) A public academic institution, public re-
19 search institution, a multijurisdictional group (as
20 such term is defined in section 520), or a consortia
21 of research institutions or academic institutions.

22 “(c) APPLICATIONS.—To be eligible for a grant under
23 this section, an entity described under subsection (b) shall
24 submit to the Secretary an application in such form, at

1 such time, and containing such information as the Sec-
2 retary determines is appropriate.

3 “(d) ELIGIBLE USES.—

4 “(1) IN GENERAL.—A grant recipient may use
5 funds awarded under this section to demonstrate
6 automated driving system technologies, including—

7 “(A) advanced safety systems, including
8 vehicle-to-vehicle and vehicle-to-infrastructure
9 communications, technologies associated with
10 autonomous vehicles, and other collision avoid-
11 ance technologies, including systems using cel-
12 lular technology;

13 “(B) innovative mobility solutions that in-
14 volve deployment of automated vehicles;

15 “(C) automated driving systems that en-
16 hance safety and mobility for elderly and dis-
17 abled individuals;

18 “(D) demonstration of shared interoper-
19 able fleet of automated vehicles;

20 “(E) demonstration and validation of ex-
21 changes of data that can support the safe, effi-
22 cient, and secure interoperable integration of
23 automated driving systems;

24 “(F) any technology associated with auto-
25 mated driving systems; and

1 “(G) any deployment concept eligible under
2 the automated driving system demonstration
3 grant program carried out by the Department
4 of Transportation before the date of enactment
5 of this section.

6 “(2) ADDITIONAL USES.—A grant recipient
7 may use funds awarded under this section for infra-
8 structure needs, including capital expenses and
9 maintenance activities, necessary to the proper and
10 safe operation of the automated driving system tech-
11 nology.

12 “(e) GRANT SELECTION.—

13 “(1) GRANT AWARDS.—The Secretary may
14 award grants to not less than 8 and not more than
15 10 eligible entities described under subsection (b) in
16 a fiscal year.

17 “(2) GEOGRAPHIC DIVERSITY.—

18 “(A) IN GENERAL.—In awarding a grant
19 under this section, the Secretary shall ensure,
20 to the maximum extent practicable, that grant
21 recipients represent diverse geographic areas of
22 the United States, including urban areas and
23 rural areas.

24 “(B) RURAL SET-ASIDE.—Not less than 20
25 percent of the amounts made available to carry

1 out this section shall be reserved for projects
2 serving rural areas, to the extent there are suf-
3 ficient eligible applications for such projects.

4 “(f) DEMONSTRATION REQUIREMENTS.—The Sec-
5 retary shall ensure that any project carried out with funds
6 provided under this section shall—

7 “(1) carry out research and development of
8 automated driving system technologies of Level 3 or
9 greater, as such term is defined pursuant to sub-
10 section (h);

11 “(2) include physical and fully operational dem-
12 onstrations;

13 “(3) include gathering and sharing of all rel-
14 evant data with the Department of Transportation
15 and the relevant State transportation agencies; and

16 “(4) address scalability to be applicable across
17 the United States to similar road environments.

18 “(g) REPORT.—Not later than 1 year after the date
19 on which a grant recipient receives a grant under this sec-
20 tion, and annually thereafter until such grant is expended,
21 the recipient shall submit to the Secretary and to the
22 transportation agency of the State in which the project
23 takes place, a report that describes—

24 “(1) lessons learned and how the demonstration
25 has met project objectives;

1 “(2) a summary of any complications experi-
2 enced with the project, including complications re-
3 lated to pedestrians, infrastructure, and other vehi-
4 cles;

5 “(3) how to use the results of the project to
6 help the public interact and better understand the
7 operations of automated driving system technologies;
8 and

9 “(4) recommendations for improving roadway
10 characteristics needed for the safe and efficient oper-
11 ation of automated driving system technologies with-
12 in the State or jurisdiction in which the project took
13 place.

14 “(h) GUIDANCE REQUIRED.—Not later than 120
15 days after the date of enactment of this section, the Sec-
16 retary shall issue guidance defining the term Level 3 or
17 greater by considering industry best practices and stand-
18 ards, including the definition found within ‘Taxonomy and
19 Definitions for Terms Related to Driving Automation Sys-
20 tems for On-Road Motor Vehicles’ published by SAE
21 International on June 15, 2018 (J3016__201806), or sub-
22 sequent versions.

23 “(i) AUTOMATED DRIVING SYSTEM TECHNOLOGIES
24 DEFINED.—In this section, the term ‘automated driving
25 system technologies’ means the hardware and software

1 that are collectively capable of performing the entire dy-
2 namic driving task on a sustained basis, regardless of
3 whether such capability is limited to a specific operational
4 design domain.”.

5 (b) CLERICAL AMENDMENT.—The analysis for chap-
6 ter 5 of title 23, United States Code, is amended by add-
7 ing at the end the following new item:

“522. Automated driving system demonstration program.”.

8 (c) PREPARING ROADWAYS FOR AUTOMATED VEHI-
9 CLES.—Section 133(b) of title 23, United States Code, is
10 amended by adding at the end the following:

11 “(16) Capital and maintenance expenses for in-
12 frastructure improvements to ensure the proper and
13 safe operation of automated driving system tech-
14 nologies for which a demonstration project was car-
15 ried out under section 522.”.

16 **SEC. 5. ACCELERATED IMPLEMENTATION AND DEPLOY-**
17 **MENT OF ADVANCED DIGITAL CONSTRUC-**
18 **TION MANAGEMENT SYSTEMS.**

19 (a) IN GENERAL.—Section 503(c) of title 23, United
20 States Code, is amended by adding at the end the fol-
21 lowing:

22 “(4) ACCELERATED IMPLEMENTATION AND DE-
23 PLOYMENT OF ADVANCED DIGITAL CONSTRUCTION
24 MANAGEMENT SYSTEMS.—

1 “(A) IN GENERAL.—Not later than 6
2 months after the date of enactment of this
3 paragraph, the Secretary of Transportation
4 shall establish and implement an advanced dig-
5 ital construction management system program
6 under the technology and innovation deploy-
7 ment program established under paragraph (1)
8 and implemented pursuant to paragraph (2)
9 to—

10 “(i) deploy advanced digital construc-
11 tion management systems that enable the
12 use of digital technologies on construction
13 sites by contractors and leverage the use of
14 such technologies, including state-of-the-
15 art automated and connected machinery
16 and optimized routing software that allows
17 individuals to perform tasks faster, safer,
18 more accurately, and with minimal super-
19 vision;

20 “(ii) accelerate State adoption of ad-
21 vanced digital construction management
22 systems applied throughout the design, en-
23 gineering, construction, and operations
24 phases of a construction project that—

- 1 “(I) maximize interoperability
2 with other systems, products, tools, or
3 applications;
- 4 “(II) increase productivity;
- 5 “(III) manage complexity of a
6 construction project;
- 7 “(IV) reduce project delays and
8 cost overruns; and
- 9 “(V) enhance safety of individ-
10 uals involved and quality of a con-
11 struction project;
- 12 “(iii) share information among stake-
13 holders through reduced reliance on paper
14 to manage construction processes and
15 deliverables, including blueprints, design
16 drawings, procurement and supply-chain
17 orders, equipment logs, daily progress re-
18 ports, and punch lists;
- 19 “(iv) develop and deploy best practices
20 for use in advanced digital construction
21 management systems;
- 22 “(v) increase the adoption and deploy-
23 ment of technology by States and units of
24 local government that enables entities car-
25 rying out construction projects to—

1 “(I) integrate the adoption of ad-
2 vanced digital construction manage-
3 ment systems and technologies in con-
4 tracts; and

5 “(II) weigh the cost of
6 digitization and technology in setting
7 project budgets;

8 “(vi) implement technology training
9 and workforce development to build the ca-
10 pabilities of entities carrying out construc-
11 tion projects that enables States and units
12 of local government to—

13 “(I) better manage projects using
14 advanced digital construction manage-
15 ment technologies; and

16 “(II) properly measure and re-
17 ward technology adoption across con-
18 struction projects carried out by the
19 State or unit of local government;

20 “(vii) develop guidance to assist
21 States in updating regulations of such
22 States to allow entities carrying out con-
23 struction projects to—

24 “(I) report data relating to the
25 project in digital formats; and

1 “(II) fully capture the efficiencies
2 and benefits of advanced digital con-
3 struction management systems and
4 related technologies;

5 “(viii) reduce the environmental foot-
6 print of construction projects by using ad-
7 vanced digital construction management
8 systems to eliminate traffic congestion
9 through more efficient projects; and

10 “(ix) enhance worker and roadway
11 user safety.

12 “(B) FUNDING.—The Secretary shall obli-
13 gate for each of fiscal years 2022 through 2026
14 from funds made available to carry out this
15 subsection such funds as may be necessary to
16 carry out this paragraph.

17 “(C) PUBLICATION.—

18 “(i) IN GENERAL.—At least once
19 every 2 years, the Secretary shall issue and
20 make available to the public on the website
21 of the Department of Transportation a re-
22 port on—

23 “(I) progress made in the imple-
24 mentation of advanced digital con-

1 construction management systems by
2 States; and

3 “(II) the costs and benefits of
4 the deployment of technology and in-
5 novations resulting from the program
6 established under this paragraph.

7 “(ii) INCLUSIONS.—The report re-
8 quired under clause (i) may include an
9 analysis of—

10 “(I) Federal, State, and local
11 cost savings;

12 “(II) project delivery time im-
13 provements;

14 “(III) traffic congestion impacts;
15 and

16 “(IV) safety improvements for
17 roadway users and construction work-
18 ers.

19 “(D) ADVANCED DIGITAL CONSTRUCTION
20 MANAGEMENT SYSTEMS DEFINED.—In this
21 paragraph, the term ‘advanced digital construc-
22 tion management systems’ means commercially
23 proven digital technologies and processes for
24 the management of construction and engineer-
25 ing activities, including—

1 “(i) systems for infrastructure plan-
2 ning, coordination, construction, mainte-
3 nance, modernization and management;
4 and

5 “(ii) asset management systems for
6 machines, site equipment, and personnel.”.

7 (b) REPORT TO CONGRESS.—Not later than 1 year
8 after the date of enactment of this Act, the Secretary shall
9 submit to the Committee on Environment and Public
10 Works of the Senate and the Committee on Transpor-
11 tation and Infrastructure of the House of Representatives
12 a report that includes—

13 (1) a description of—

14 (A) the status of the program carried out
15 under section 503(c)(4) of title 23, United
16 States Code, and any other use of advanced
17 digital construction management systems in
18 each State; and

19 (B) the progress of each State toward ac-
20 celerating the adoption of advanced digital con-
21 struction management systems; and

22 (2) an analysis of the savings in project delivery
23 time and project costs that can be achieved through
24 the use of advanced digital construction manage-
25 ment systems.

1 **SEC. 6. INNOVATIVE PROJECT DELIVERY METHODS.**

2 Section 120(c)(3) of title 23, United States Code, is
3 amended—

4 (1) in subparagraph (B)—

5 (A) in clause (v) by striking “or” at the
6 end;

7 (B) in clause (vi) by striking the period
8 and inserting “; or” ; and

9 (C) by inserting at the end the following:

10 “(vii) advanced digital construction
11 management systems as defined in section
12 503(c)(4).”; and

13 (2) in subparagraph (C)(i) by striking “10 per-
14 cent” and inserting “25 percent”.

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