

112TH CONGRESS  
1ST SESSION

# H. R. 995

To improve transportation safety, efficiency, and system performance through innovative technology deployment and operations.

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## IN THE HOUSE OF REPRESENTATIVES

MARCH 10, 2011

Mr. CARNAHAN (for himself and Mr. ROGERS of Michigan) introduced the following bill; which was referred to the Committee on Transportation and Infrastructure

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## A BILL

To improve transportation safety, efficiency, and system performance through innovative technology deployment and operations.

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 “Smart Technologies  
5 for Communities Act”.

6 **SEC. 2. FINDINGS.**

7 Congress finds the following:

8 (1) Congestion on our roadways is hampering  
9 American’s daily lives, slowing down commerce, pol-

1 luting the environment we live in, and wasting fuel.  
2 It is estimated that in our metropolitan commu-  
3 nities, the average commuter wasted 34 hours in  
4 2009 sitting in traffic, resulting in 3,900,000,000  
5 gallons of wasted fuel and costing more than  
6 \$115,000,000,000 annually. With our growing popu-  
7 lation and demand for freight transportation ex-  
8 pected to double by 2035, failure to address traffic  
9 congestion adds to the cost of goods movement and  
10 threatens the Nation's economic competitiveness and  
11 quality of life.

12 (2) Even with a record decline in traffic fatali-  
13 ties in 2009, nearly 34,000 people were killed on  
14 United States roads, the equivalent of more than  
15 200 fully loaded 737 airliners. The economic cost  
16 alone of traffic fatalities and injuries has been esti-  
17 mated at \$230,000,000,000 each year.

18 (3) The transportation sector contributes nearly  
19 one-third of the Nation's carbon dioxide emissions,  
20 while wasted fuel from idling vehicles and stop-and-  
21 go traffic puts family budgets in the red, drives up  
22 the cost of goods and services, and increases our Na-  
23 tion's dependence on foreign oil.

24 (4) The United States cannot continue to sim-  
25 ply build our way into a safer, cleaner, and more ef-

1 efficient transportation system. We must make better  
2 use of the tools that are available, including intel-  
3 ligent transportation systems (ITS), to actively man-  
4 age our transportation network to improve safety,  
5 efficiency, and multimodal connectivity.

6 (5) Technology solutions are available today to  
7 help cities and States reduce congestion and emis-  
8 sions, make our roads and transit systems safer, and  
9 provide the public with improved access to transpor-  
10 tation options and real-time information to make ef-  
11 ficient travel decisions.

12 (6) Transitioning to electric and other alter-  
13 native fueled vehicles requires the integration of in-  
14 telligent transportation systems with the Smart Grid  
15 and other energy distribution and charging systems.

16 (7) ITS technologies are cost effective and  
17 quick to deploy, with solutions like synchronized and  
18 adaptive traffic signals yielding a \$40 return in time  
19 and fuel savings for every \$1 invested while also re-  
20 ducing carbon dioxide emissions up to 22 percent  
21 and travel delays by 25 percent. The Government  
22 Accountability Office found the benefit-cost ratio of  
23 a nationwide real-time traffic information system to  
24 be 25 to 1, with a \$1,200,000,000 investment re-  
25 turning more than \$30,000,000,000 in safety, mobil-

1       ity, and environmental benefits. The overall benefit-  
2       cost ratio of ITS-enabled operational improvements  
3       is estimated at 9 to 1, a significant return on invest-  
4       ment when compared to the addition of new highway  
5       capacity which has an estimated benefit-to-cost ratio  
6       of 2.7 to 1.

7               (8) An estimated 31 percent of traffic crashes  
8       could be prevented or have their impact reduced  
9       through the deployment of collision avoidance tech-  
10      nologies, according to the Insurance Institute for  
11      Highway Safety. Moreover, the Department of  
12      Transportation estimates that a comprehensive vehi-  
13      cle-to-vehicle and vehicle-to-infrastructure commu-  
14      nications network could potentially prevent or reduce  
15      the impact of 81 percent of all unimpaired vehicle  
16      crashes. For ITS technologies like vehicle-to-vehicle  
17      and vehicle-to-infrastructure communications, a na-  
18      tional coordinated deployment structure is important  
19      for ensuring uniform standards and regulations that  
20      ensure interoperability and stability.

21              (9) Transitioning to a more efficient, perform-  
22      ance-based transportation network requires ITS  
23      technologies to provide accurate, real-time traffic  
24      and multimodal transportation system information  
25      necessary for measuring performance, as well as for

1 actively managing the transportation network to op-  
2 timize capacity and meet or exceed system perform-  
3 ance goals.

4 (10) Effective transportation financing mecha-  
5 nisms of today and tomorrow depend on ITS to be  
6 viable, including electronic toll collection, dynamic  
7 pricing, integrated payment systems for transit,  
8 tolls, parking and other services, and potential fu-  
9 ture alternatives such as variable mileage-based user  
10 fees.

11 (11) Investing in ITS creates good jobs, with  
12 an average of 50 percent of ITS project spending  
13 going directly to wages and salaries as compared to  
14 20 percent for new highway construction. Research-  
15 ers from the London School of Economics and the  
16 Information Technology and Innovation Foundation  
17 (referred to in this section as “ITIF”) have found  
18 that investing in ITS creates a network effect  
19 throughout the economy and stimulates job creation  
20 across multiple sectors, including green jobs, high-  
21 tech, automotive, information technology, consumer  
22 electronics, and related industries. In addition, in-  
23 vesting in ITS provides a foundation for long-term  
24 benefits including government cost savings, econ-

1 omy-wide productivity, and an improved quality of  
2 life.

3 (12) The lack of national investment in ITS has  
4 caused the Nation to fall behind other world innova-  
5 tion leaders. A 2010 ITIF report found that the  
6 United States is lagging behind Japan, South  
7 Korea, Singapore, and other leading Asian and Eu-  
8 ropean nations in the deployment of ITS tech-  
9 nologies with countries like China beginning to in-  
10 vest heavily in the deployment of transportation  
11 technology. These countries have generated signifi-  
12 cant benefits for their citizens, economy, and envi-  
13 ronment by investing heavily in ITS solutions. In  
14 order to strengthen the Nation’s economic competi-  
15 tiveness and quality of life, it is in the interest of the  
16 United States to encourage the accelerated develop-  
17 ment and deployment of intelligent transportation  
18 systems.

19 **SEC. 3. DEFINITIONS.**

20 In this Act, the following definitions apply:

21 (1) **ELIGIBLE ENTITY.**—The term “eligible enti-  
22 ty” means a State or local government, including a  
23 territory of the United States, tribal government,  
24 transit agency, port authority, metropolitan planning  
25 organization, or other political subdivision of a State

1 or local government or a multi-State or multi-juris-  
2 dictional group applying through a single lead appli-  
3 cant.

4 (2) ITS.—The term “ITS” means intelligent  
5 transportation systems.

6 (3) MULTI-JURISDICTIONAL GROUP.—The term  
7 “multi-jurisdictional group” means a combination of  
8 State governments, locals governments, metropolitan  
9 planning agencies, transit agencies, or other political  
10 subdivisions of a State that have signed a written  
11 agreement to implement the Smart Communities  
12 Technology Initiative across jurisdictional bound-  
13 aries. Each member of the group, including the lead  
14 applicant, must be an eligible entity to receive a  
15 grant under this Act.

16 (4) SECRETARY.—The term “Secretary” means  
17 the Secretary of Transportation.

18 **SEC. 4. SMART COMMUNITIES TECHNOLOGY INITIATIVE.**

19 (a) ESTABLISHMENT OF PROGRAM.—Not later than  
20 6 months after the date of enactment of this Act, the Sec-  
21 retary shall establish a Smart Communities Technology  
22 Initiative to provide grants to eligible entities to develop  
23 pilot programs to serve as model deployment sites for large  
24 scale installation and operation of ITS to improve safety,  
25 efficiency, system performance, and return on investment.

1 The Secretary shall develop criteria for selection of an eli-  
2 gible entity to receive a grant, including how the deploy-  
3 ment of technology will enable the recipient—

4 (1) to reduce costs and improve return on in-  
5 vestments, including through the enhanced utiliza-  
6 tion of existing transportation capacity;

7 (2) to deliver environmental benefits and reduce  
8 energy consumption by alleviating congestion and  
9 streamlining traffic flow;

10 (3) to measure and improve the operational per-  
11 formance of its transportation network;

12 (4) to reduce the number and severity of traffic  
13 collisions and increase driver, passenger, and pedes-  
14 trian safety;

15 (5) to collect, disseminate, and utilize real-time  
16 traffic, transit, parking, and other transportation-re-  
17 lated information to improve mobility, reduce con-  
18 gestion, and provide for more efficient and accessible  
19 transportation alternatives;

20 (6) to monitor transportation assets to improve  
21 infrastructure management, reduce maintenance  
22 costs, prioritize investment decisions, and ensure a  
23 state of good repair; and

24 (7) to deliver economic benefits by reducing  
25 delays, improving system performance, and providing



1 for the efficient and reliable movement of goods and  
2 services.

3 (b) REQUEST FOR APPLICATIONS.—Not later than 6  
4 months after the date of enactment of this Act, the Sec-  
5 retary shall request applications in accordance with sec-  
6 tion 5 for participation in the Smart Communities Tech-  
7 nology Initiative.

8 **SEC. 5. GRANT PROGRAM.**

9 (a) GRANT APPLICATION.—To be considered for a  
10 grant under this Act, an eligible entity shall submit an  
11 application to the Secretary that includes the following:

12 (1) DEPLOYMENT PLAN.—A plan to deploy and  
13 provide for the long-term operation and maintenance  
14 of intelligent transportation systems to improve safe-  
15 ty, efficiency, system performance, and return on in-  
16 vestment, such as—

17 (A) real-time integrated traffic, transit,  
18 and multimodal transportation information;

19 (B) advanced traffic, freight, parking, and  
20 incident management systems;

21 (C) collision avoidance systems;

22 (D) advanced technologies to improve tran-  
23 sit and commercial vehicle operations;

24 (E) synchronized, adaptive, and transit  
25 preferential traffic signals;

1 (F) advanced infrastructure condition as-  
2 sessment technologies; and

3 (G) other technologies to improve system  
4 operations, including ITS applications necessary  
5 for multimodal systems integration and for  
6 achieving performance goals.

7 (2) OBJECTIVES.—Quantifiable system per-  
8 formance improvements, including reducing traffic-  
9 related crashes, congestion, and costs, optimizing  
10 system efficiency, and improving access to transpor-  
11 tation services.

12 (3) RESULTS.—Quantifiable safety, mobility,  
13 and environmental benefit projections including data  
14 driven estimates of how the project will improve the  
15 region’s transportation system efficiency and reduce  
16 traffic congestion.

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

23 (5) LEVERAGING.—A plan to leverage and opti-  
24 mize existing local and regional ITS investments.

1           (6) INTEROPERABILITY.—A plan to ensure  
2 interoperability of deployed technologies with other  
3 tolling, traffic management, and intelligent transpor-  
4 tation systems.

5           (b) GRANT SELECTION.—

6           (1) GRANT AWARDS.—Not later than 1 year  
7 after the date of enactment of this Act, the Sec-  
8 retary shall award a grant to not more than 6 eligi-  
9 ble entities with funds available for up to 5 fiscal  
10 years.

11           (2) GEOGRAPHIC DIVERSITY.—In awarding a  
12 grant under this section, the Secretary shall ensure,  
13 to the extent practicable, that grant recipients rep-  
14 resent diverse geographic areas of the United States,  
15 including urban, suburban, and rural areas.

16 **SEC. 6. USES OF FUNDS.**

17           A grant recipient may use funds authorized in this  
18 Act to deploy, operate, and maintain ITS and ITS-enabled  
19 operational strategies, including—

20           (1) advanced traveler information systems;

21           (2) advanced transportation management tech-  
22 nologies;

23           (3) infrastructure maintenance, monitoring, and  
24 condition assessment;

25           (4) advanced public transportation systems;

1 (5) transportation system performance data col-  
2 lection, analysis, and dissemination systems;

3 (6) advanced safety systems, including vehicle-  
4 to-vehicle and vehicle-to-infrastructure communica-  
5 tions and other collision avoidance technologies;

6 (7) integration of intelligent transportation sys-  
7 tems with the Smart Grid and other energy distribu-  
8 tion and charging systems;

9 (8) electronic pricing and tolling systems; and

10 (9) advanced mobility and access technologies,  
11 such as dynamic ridesharing and information sys-  
12 tems to support human services for elderly and dis-  
13 abled Americans.

14 **SEC. 7. REPORTS.**

15 (a) REPORT TO SECRETARY.—Not later than 1 year  
16 after an eligible entity receives a grant award under this  
17 Act and each year thereafter, each grant recipient shall  
18 submit a report to the Secretary that describes—

19 (1) deployment and operational cost compared  
20 to the benefits and savings from the pilot program  
21 and compared to other alternative approaches; and

22 (2) how the project has met the original expecta-  
23 tion as projected in the deployment plan submitted  
24 with the application, including—

1 (A) data on how the program has helped  
2 reduce traffic crashes, congestion, costs, and  
3 other benefits of the deployed systems;

4 (B) data on the effect of measuring and  
5 improving transportation system performance  
6 through the deployment of advanced tech-  
7 nologies;

8 (C) the effectiveness of providing real-time  
9 integrated traffic, transit, and multimodal  
10 transportation information to the public to  
11 make informed travel decisions; and

12 (D) lessons learned and recommendations  
13 for future deployment strategies to optimize  
14 transportation efficiency and multimodal system  
15 performance.

16 (b) REPORT TO CONGRESS.—Not later than 2 years  
17 after grants have been allocated and each year thereafter,  
18 the Secretary shall submit a report to Congress that de-  
19 scribes the effectiveness of grant recipients in meeting  
20 their projected deployment plan, including data on how the  
21 program has—

22 (1) reduced traffic-related fatalities and inju-  
23 ries;

24 (2) reduced traffic congestion and improved  
25 travel time reliability;

- 1 (3) reduced transportation-related emissions;
- 2 (4) optimized multimodal system performance;
- 3 (5) improved access to transportation alter-
- 4 natives;
- 5 (6) provided the public with access to real-time
- 6 integrated traffic, transit, and multimodal transpor-
- 7 tation information to make informed travel deci-
- 8 sions;
- 9 (7) provided cost savings to transportation
- 10 agencies, businesses, and the traveling public; and
- 11 (8) provided other benefits to transportation
- 12 users and the general public.

13 (c) **ADDITIONAL GRANTS.**—If the Secretary deter-

14 mines from a grant recipient’s reports that the recipient

15 is not carrying out the requirements of the grant, the Sec-

16 retary may cease to provide any additional grant funds

17 to the recipient. The Secretary shall have the authority

18 to redistribute remaining funds to select additional eligible

19 entities for pilot programs under this Act.

20 **SEC. 8. AUTHORIZATION OF APPROPRIATIONS.**

21 (a) **FUNDING.**—

22 (1) **IN GENERAL.**—There are authorized to be

23 appropriated out of the Highway Trust Fund to

24 carry out this Act—

25 (A) \$100,000,000 for fiscal year 2012;

- 1 (B) \$300,000,000 for fiscal year 2013;  
2 (C) \$200,000,000 for fiscal year 2014;  
3 (D) \$200,000,000 for fiscal year 2015;  
4 (E) \$200,000,000 for fiscal year 2016; and  
5 (F) \$200,000,000 for fiscal year 2017.

6 (2) CONTRACT AUTHORITY.—Funds authorized  
7 under this subsection shall be available for obligation  
8 in the same manner as if the funds were apportioned  
9 under chapter 1 of title 23, United States Code, ex-  
10 cept that such funds shall not be transferable, the  
11 obligation limitations shall not apply to such funds,  
12 and shall remain available until expended.

13 (b) GRANT LIMITATION.—The Secretary may not  
14 award more than 25 percent of the amount appropriated  
15 under this Act to a single grant recipient.

16 (c) EXPENSES FOR GRANT RECIPIENTS.—A grant  
17 recipient under this Act may use not more than 5 percent  
18 of the grant award each fiscal year to carry out planning  
19 and reporting requirements.

20 (d) EXPENSES FOR SECRETARY.—Before awarding  
21 grant funds under this Act, the Secretary may set aside  
22 \$3,000,000 each fiscal year for program reporting, evalua-  
23 tion, and administrative costs.

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