

The National Transportation Systems Center



Advancing transportation innovation for the public good



U.S. Department of Transportation Office of Research and Technology John A. Volpe National Transportation Systems Center

# **About Volpe**

#### Background

- □ Volpe established in 1970
- Part of U.S. Department of Transportation (DOT) Office of Research and Technology
- Named after former DOT Secretary and MA Governor John A. Volpe

### **Volpe supports DOT goals**

- □ Safety
- □ State of good repair
- **D** Economic competitiveness
- Livable communities
- Environmental sustainability





## Automation and the Transportation System

- □ Challenges
  - Network impacts of mixed-fleet operation
  - Uncertain VMT changes
  - Urban design and land use
- Opportunities
  - Improved personal mobility
  - Fuel economy improvements
  - Reduced VMT?
  - Urban design and land use?





Image: dacosta / 123RF; chuyu / 123RF



## 2016 U.S. DOT Automation Milestones

- Guidance on the safe deployment and operation of automated vehicles
- Model state policy on automated vehicles
- □ Smart City Challenge
- FAST Act: Advanced transportation and congestion management technologies deployment initiative





## **Principles for Connecting People to Opportunity**

- Recognize that transportation connects people to opportunity and can invigorate communities;
- Establish that while we cannot change the past, future transportation projects must connect and strengthen communities, and;
- Build transportation facilities that best serve the communities impacted by them.



DOTConnects



## **Beyond Traffic: the Smart City Challenge**

Technology Elements (Highest Priority)





### FAST Act: Advanced Transportation and Congestion Management Technologies Deployment Initiative

- The ATCMTD Program makes competitive grants for model deployment sites of advanced transportation technologies to improve safety, efficiency, system performance, and infrastructure return on investment.
- □ Five year program; \$60 million per year
- □ Eligible technologies include:
  - V2V and V2I
  - Autonomous vehicles and collision avoidance systems

https://www.fhwa.dot.gov/fastact/funding.cfm

On	e Nundred Fourteenth Congress of the United States of America
	AT THE FIRST SESSION
'	legun and held at the City of Washington on Tuesday. the sixth day of January, two thousand and fifteen
	An Act
To autho	prize funds for Federal-aid highways, highway safety programs, and transit programs, and for other purposes.
Be the Uni	it enacted by the Senate and House of Representatives of ted States of America in Congress assembled,
(a) ica's Su (b) is as fo	N 1. SHORT TITLE: TABLE OF CONTENTS. SHORT TITLE.—This Act may be cited as the "Fixing Amer- ricae Transportation Act" or the "FAST Act". TABLE OF CONTENTS.—The table of contents for this Act llows:
Sec. 1.	Short title; table of contents. DIVISION A-SURFACE TRANSPORTATION
Sec. 100 Sec. 100 Sec. 100 Sec. 100	01. Definitions. 02. Reconciliation of funds. 03. Effective date. 04. References. TTTE L_FEDERAL-AID HIGHWAYS
	Substille A_Authorizations and Programs
Sec. 11 Sec. 11 Sec. 11 Sec. 1 Sec. 1	Substite A - Automation   01. Authorization of appropriations.   02. Obligation ceiling.   03. Definitionent   04. Approxinity significant freight and highway projects.   05. National highway preformance program.   07. Energency relief for faderally own rous.   08. Railway - highway grads buck grant program.   09. Buchase trainspace wasion projects.   111. Binding of bridge projects.   112. Construction of forty boats and program.   113. Highway addety improvement program.   114. Congestion mith Puerto Rico highway projects.   115. The trainspace and tribula transportation program.   116. Temperature program.   117. Federal lands and tribul transportation program.   118. Thold mapped trainsportanies extivities.   119. Federal lands at forther program.   119. Federal lands at forther program.   112. Black neichildy for National Highway Toynem.   113. Risking the program.   114. State program.   115. State Deckhildy for National Highway Space.   116. State Deckhildy for National Highway Toynem.   117. State Deckhildy for National Highway fragmam.   118. State Deckhildy for National Highway Toyne fortheranontheran fortherane fortheran highway treaction heran
Sec.	1201. Metropolitan transportation planning. 1202. Statewide and nonmetropolitan transportation planning.
	Subtitle C-Acceleration of Project Denvery
Sec.	1301. Satisfaction of requirements of



### **USDOT Deployment Opportunities**

- □ Mobility on Demand (MOD) Sandbox
  - Guiding principles
    - System integration;
    - Innovative business models;
    - $\,\circ\,$  Equity of service delivery; and
    - $\circ$  Partnerships.

https://www.transit.dot.gov/researchinnovation/mobility-demand-mod-sandbox-program







# Intelligent Transportation Systems Joint Program Office Automation Program





# **Foundational Policy Research**

### Federal Motor Vehicle Safety Standards (FMVSS)





FHWA Automated Vehicle Policy Research Needs



# **Targeted Technical Research**





## **Stakeholder Collaboration**





自動走行システム



SIP-adus (Innovation of Automated Driving for Universal Services)



USERS. VEHICLES. INFRASTRUCTURE.





# What Should You Do? - Get Smart

- □ Learn more about the technology
- □ Find out what's happening locally
- Consider long term impacts



# What's Happening Right Here?





Image: CRA