CONNECTED VEHICLE PILOT DEPLOYMENT PROGRAM

The U.S. Department of Transportation's (USDOT's) connected vehicle research program is a multimodal initiative to enable safe, interoperable, networked wireless communications among vehicles, infrastructure, and personal communications devices. The USDOT and others are researching connected vehicles because of the potentially transformative capabilities of the technology to make surface transportation safer, smarter, and greener. Federal connected vehicle research has produced a considerable body of work to support pilot deployments, including concepts of operations and prototyping for more than two dozen applications. Concurrent federal research efforts are developing critical cross-cutting technologies and other enabling capabilities required to integrate and deploy applications.

Based on the successful results of the connected vehicle research program, and the recent decision by the National Highway Traffic Safety Administration to pursue vehicle-to-vehicle communications safety technology for light vehicles, the USDOT is pursuing a robust Connected Vehicle Pilot Deployment Program. This program will serve as a mechanism to expedite the implementation of connected vehicle technology. The pilots will be initial deployments of connected vehicle technology in real-world settings with the aim of delivering near-term safety, mobility, and environmental benefits to the public.

On September 1, 2016, the USDOT awarded three cooperative agreements collectively worth more than $45 million to initiate the design/build/test phase of the Connected Vehicle Pilot Deployment Program. The three sites will embark on a 20-month phase of activity to design, build, and test the nation's most complex and extensive deployment of integrated wireless in-vehicle, mobile device, and roadside technologies.

Vision

The Connected Vehicle Pilot Deployment Program seeks to spur innovation among early adopters of connected vehicle application concepts, using best available and emerging technologies. The pilot deployments are expected to integrate connected vehicle research concepts into practical and effective elements, enhancing existing operational capabilities. The intent of these pilot deployments is to encourage

Focus of Pilot Deployments

The pilot deployments will address research questions such as:

- Can connected applications be successfully deployed as a part of operational practice, leveraging vehicles and mobile devices (in the vehicle or outside of the vehicle) both as data sources and application platforms?
- Can system productivity, environmental impact, traveler mobility, and transportation safety be measured and enhanced in innovative and meaningful ways by combining existing and emerging mobile data sources (e.g., by using vehicles and mobile devices as data sources)?
- To what extent can connected vehicle technologies and data be used to support real-time, performance-based management of roadways, transit systems, and freight carriers?
- What are the institutional, legal, and technical issues that may help or hinder the use of connected vehicle technologies?
- What wireless and other communications media can be combined to make large-scale data capture and mobility applications cost effective?
- How can diverse data sources be efficiently integrated and used?
- Can customer satisfaction with demonstrated applications be measured?
- Are state and local agencies prepared to implement and maintain connected vehicle technologies?
- How effective is a security credential management system in enabling connected vehicle communications?

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partnerships of multiple stakeholders (e.g., private companies, states, transit agencies, commercial vehicle operators, and freight shippers) to deploy applications using data captured from multiple sources (e.g., vehicles, mobile devices, and infrastructure) across all elements of the surface transportation system (i.e., transit, freeway, arterial, parking facilities, and tollways) to support improved system performance and enhanced performance-based management.


Photo Source: USDOT

The pilot deployments will support an impact assessment and evaluation effort that will inform a broader cost-benefit assessment of connected vehicle concepts and technologies. Pilot deployments offer an opportunity for stakeholders and partners to develop operational systems that exist well beyond the life of the program.

Connected Vehicle Pilot Locations

The USDOT has awarded up to $45 million to New York City Department of Transportation; Tampa Hillsborough Expressway Authority; and ICF/Wyoming for the initial wave of pilots of next-generation connected vehicle technology. The locations were selected in a competitive process to go beyond traditional vehicle technologies to help drivers better use the roadways to get to work and appointments, relieve the stress caused by bottlenecks, and communicate with pedestrians on cell phones of approaching vehicles.

New York City Department of Transportation: This pilot will install vehicle-to-vehicle (V2V) technology in 10,000 city-owned vehicles, including cars, buses, and limousines, that frequently travel in Midtown Manhattan, as well as vehicle-to-infrastructure (V2I) technology throughout Midtown. This includes upgrading traffic signals with V2I technology along avenues between 14th Street and 66th Street in Manhattan and throughout Brooklyn. Additionally, roadside units will be equipped with connected vehicle technology along the FDR Drive between 50th Street and 90th Street.

Tampa Hillsborough Expressway Authority: This pilot will focus on solving peak rush-hour congestion in downtown Tampa and protecting the city's pedestrians by equipping their smartphones with the same connected technology being put into the vehicles. Tampa will also measure the environmental benefits of using this technology.

ICF/Wyoming: This pilot will focus on the efficient and safe movement of freight through the I-80 east-west corridor, which is critical to commercial heavy-duty vehicles moving across the northern portion of our country. Approximately 11,000 to 16,000 vehicles travel this corridor every day, and by using V2V and V2I, the Wyoming Department of Transportation will both collect and disseminate information to vehicles not equipped with the new technologies.

The high level of interest that was prompted by the announcement of the Connected Vehicle Pilot Deployment Program is a testament to the promise of connected and automated vehicles. With the Connected Vehicle Pilot Deployment Program, the USDOT is now focusing on accelerating the deployment of the technology in more regions throughout the nation. The USDOT's goals for the program are straightforward—advance deployment, measure impact, and uncover and address the technical and non-technical barriers to deployment in a hands-on way.

Visit the program's website to learn more: www.its.dot.gov/pilots.

For more information about this initiative, please contact:
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Or, visit the following websites:
Connected Vehicle Pilot Deployment Program Website: www.its.dot.gov/pilots
ITS JPO Website: www.its.dot.gov/

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