Photo Source: USDOT

CONNECTED VEHICLE PILOT DEPLOYMENT PROGRAM

LIMIT 35 SAFETY

MOBILITY

ENVIRONMENT

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.

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 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.

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.

Wave One Pilot Locations

- **New York City, NY:** 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, FL:** 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.
- **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.

U.S. Department of Transportation

Proposed Program Schedule

The USDOT has awarded up to $42 million to New York City; Tampa, FL; and 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.

There will be another wave of pilot deployments in 2017.

TABLE 1 Proposed Connected Vehicle Pilot Deployment Schedule

Schedule Item	Date
Wave 1 Pilot Deployments Award(s)	September 2015
Solicitation for Wave 2 Pilot Deployment Concepts	Early 2017
Wave 2 Pilot Deployments Award(s)	September 2017
Pilot Deployments Complete	September 2020

Focus of Pilot Deployments

The pilot deployments should address the following research questions:

- 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?

How to Get Involved

There is still an opportunity for your community to be on the cutting edge of new technology. The second wave of pilot deployments will begin in 2017.

The following are some key resources to help you prepare for the Connected Vehicle Pilot Deployment Program:

- Learn more about the program:
  - Review briefing materials presented at workshops and public meetings on the Connected Vehicle Pilot Deployment Program
  - Visit the program's website: www.its.dot.gov/pilots
  - Contact the USDOT with questions
- Form partnerships and identify needs, such as:
  - Create partnerships with transit agencies, neighboring jurisdictions, traveler information service providers, private sector device and equipment manufacturers, local trucking firms, state and local roadway operators, and advocacy groups (among other potential stakeholders)
  - Identify the highest-priority needs across the community partners (mobility, safety, and environmental)
- Assess connected vehicle technologies and applications:
  - Match community needs to connected vehicle applications
  - Consider the potential benefit of an integrated deployment of two or more applications in your community
  - Create a pilot deployment concept that community stakeholders support in preparation for the second wave of deployment solicitations. Use of the Connected Vehicle Reference Implementation Architecture (CVRIA) to construct project architectures is encouraged. Please visit www.iteris.com/CVRIA/ for tools and information.

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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