Source: USDOT

VEHICLE-TO-INFRASTRUCTURE (V2I) PROGRAM

Vehicle-to-infrastructure (V2I) communication, which involves the exchange of safety and operational data between vehicles and elements of the transportation infrastructure, offers a wide range of safety, mobility and environmental benefits. When cars, buses, trucks and emergency vehicles are able to "talk" to traffic signals, stop signs, crosswalks and other features of the surface transportation system, drivers can be alerted and avoid crashes. Traffic management centers can use the data to improve system performance and minimize environmental impacts. Even bicyclists and pedestrians carrying smartphones can participate in the V2I communication network, enabling traffic control devices to respond to their behavior.

The V2I program seeks to identify, develop and deploy applications that leverage the full potential of V2I communication to better inform travelers, enhance operational practices and transform surface transportation systems management. V2I technology is a key focus of the connected vehicle research of the Intelligent Transportation Systems Joint Program Office (ITS JPO) within the U.S. Department of Transportation (USDOT) Office of the Assistant Secretary for Research and Technology (OST-R). Today, the program aims to apply the results of that research to facilitate V2I deployments that provide real-world benefits. ITS JPO coordinates its V2I-related efforts with agencies within USDOT including the National Highway Traffic Safety Administration (NHTSA), Federal Motor Carrier Safety Administration (FMCSA), Federal Highway Administration (FHWA), Federal Transit Administration (FTA) and Federal Railroad Administration (FRA).

Knowledge/Technology Transfer

Implementing V2I communication requires the cooperative efforts of numerous public- and private-sector stakeholders. Federal agencies, state and local transportation agencies, vehicle original equipment manufacturers (OEMs) and industry groups must work together to address such issues as interoperability, reliability, privacy and security. Elected officials and other decision-makers need to become knowledgeable of the policy and funding implications of V2I technology. The general public, too, must understand and accept the technology in order to use it. For all these reasons, knowledge/technology transfer is a major goal of the V2I program.
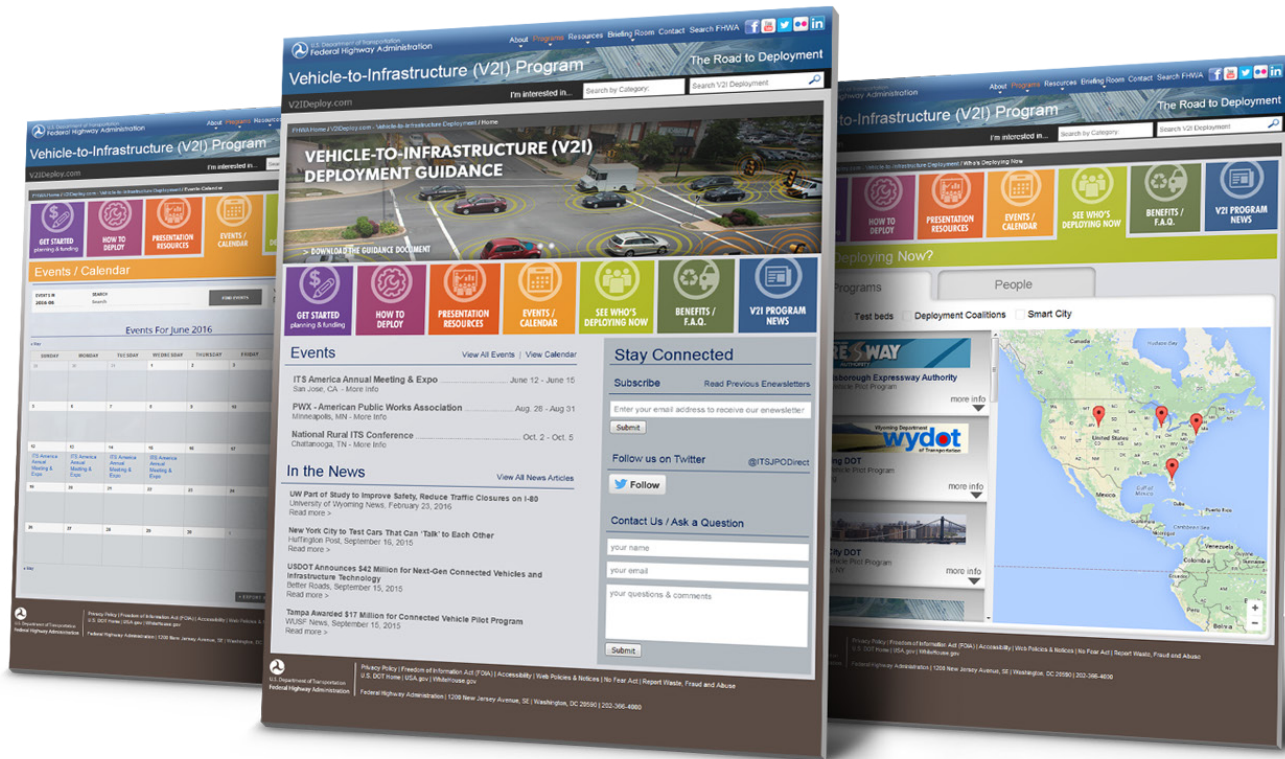
Coming Soon

The Federal Highway Administration (FHWA) is currently developing additional resources to facilitate a smooth and effective deployment path for transportation agencies interested in implementing V2I technology. One of these resources is the V2I Deployment Guidance, which provides information on a broad range of topics including interoperability, security and privacy. It addresses practices that promote efficient and effective planning, procurement and operations throughout the lifecycle of a project. It also identifies the applicable federal-aid programs and summarizes their eligibility requirements. The V2I Deployment Guidance will be released soon, so be sure to check www.its.dot.gov/deployment_resources.htm for updates.

U.S. Department of Transportation

V2I Program Website

Many resources are available for state and local transportation agencies, or anyone with an interest in V2I deployment, on the V2I program website at V2IDeploy.com. The website provides:

- Information on how to begin planning for V2I deployment and where to obtain funding

- Practical deployment resources including the forthcoming V2I Deployment Guidance

- Links to tools such as the Connected Vehicle Reference Implementation Architecture (CVRIA) website and the Open Source Application Development Portal (OSADP)

- Presentations, talking points, case studies, photos, videos, infographics and other resources to help V2I advocates educate others and make the case for deployment

- Calendar of relevant events including conferences, trade shows, webinars, trainings, on-site tours and demonstrations

- Tools to enable deployers of V2I technology across the United States to exchange information and insights

- Interactive map of known V2I deployment sites, with links to project documents

- How to contact subject matter experts at the federal, state and local levels

- Explanations of the benefits of V2I technology

- Answers to frequently asked questions

- V2I program news

Get Involved

V2I communication is moving from research to deployment in projects across the country, but the biggest changes are yet to come. Now is the time for state and local departments of transportation to incorporate V2I technology in their plans. Visit the V2I program website at V2IDeploy.com for more information on how to get involved.