



UNITED STATES
DEPARTMENT OF TRANSPORTATION

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Intelligent Transportation Systems: Annual U.S. State-of-the-Industry Review
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Presentation Overview

- Introduction
- ITS Strategic Plan
- Connected Vehicle Research
 - NHTSA Decision
 - Safety Pilot
- Infrastructure Deployment
- 2012 Accomplishments
- International Activities
- What's New
- Stay Connected



Photo Source: USDOT/ ThinkStock



Today's Transportation Challenges

Safety

- 32,367 highway deaths in 2011
- 5.3 million crashes in 2011
- Leading cause of death for ages 4, 11-27



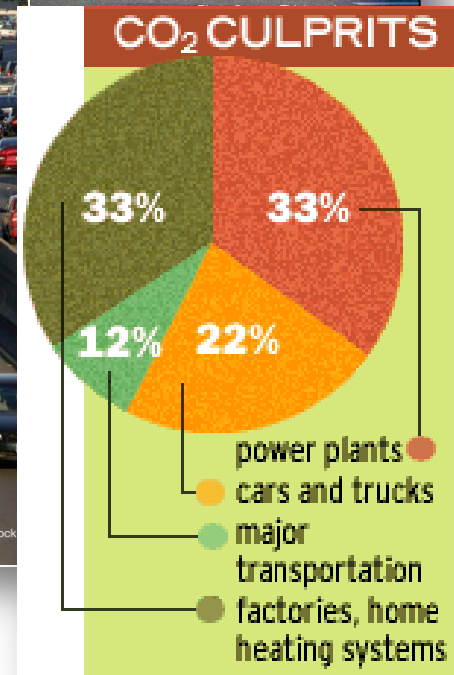
Mobility

- 4.8 billion hours of travel delay
- \$101 billion cost of urban congestion



Environment

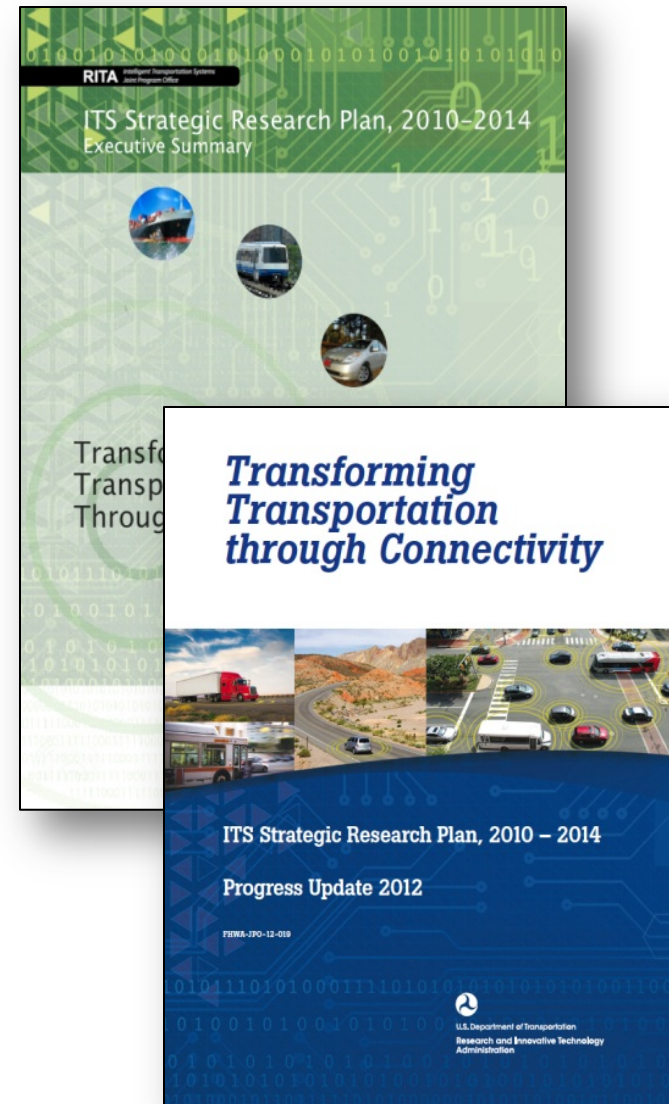
- 1.9 billion gallons of wasted fuel



Data Sources: *Traffic Safety Facts: 2010 Data*, National Highway Traffic Safety Administration, June 2012; *2011 Annual Urban Mobility Report*, Texas Transportation Institute

ITS Strategic Research Plan 2010-2014

- **Vision:** To research and facilitate a national, **multimodal surface transportation system** that features a connected transportation environment around **vehicles of all types**, the infrastructure, and portable devices to serve the public good by leveraging technology to maximize safety, mobility, and environmental performance
- Plan developed with full participation by all surface transportation modal administrations, as well as with significant interaction with multimodal stakeholders
- 2012 Progress Update recently completed

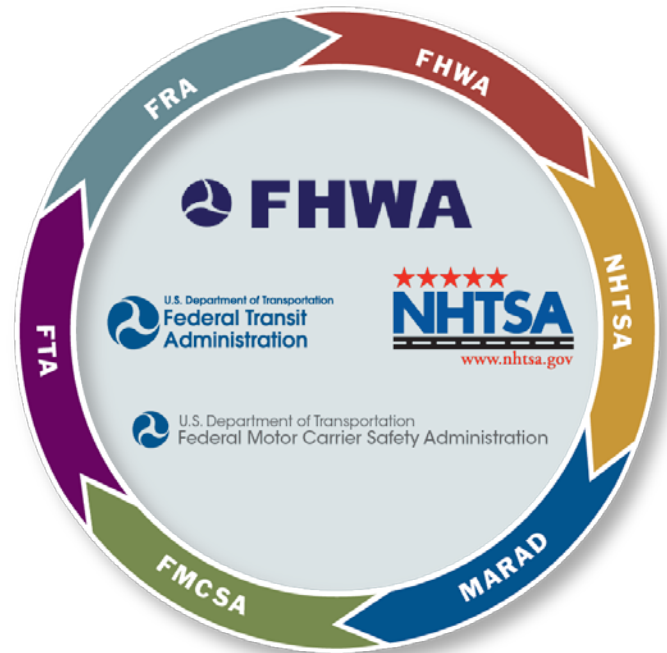


USDOT Modal Collaboration & Partnership



The ITS JPO works with our modal partners in implementing the strategic vision

ITS JPO coordinates ITS research with these modal administrations



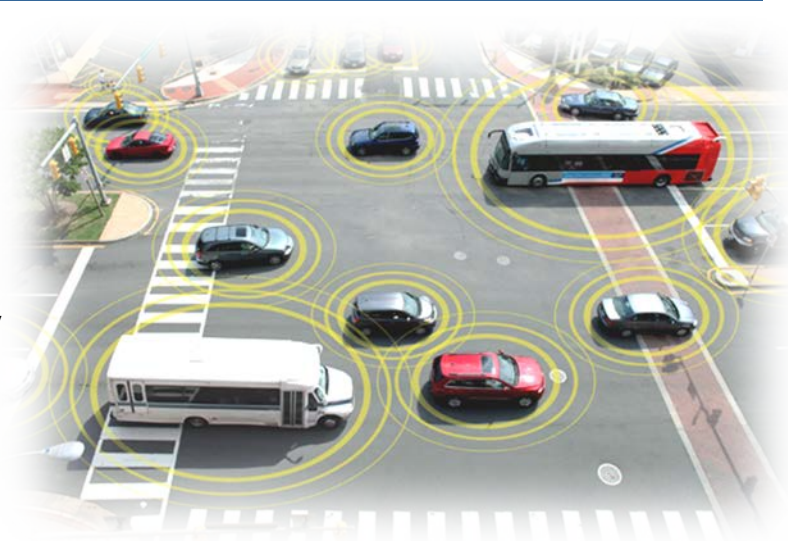
Connected Vehicle

- **NHTSA Agency Decision**

- 2013 NHTSA agency decision on V2V safety communications systems
- Similar milestone in 2014 for a decision regarding V2V safety technology on heavy vehicles
- Information to support the decision will come from many sources, including the **Safety Pilot Model Deployment**

- **Policy Work**

- System security
- Privacy
- Governance
- Business Models
- Legal Issues

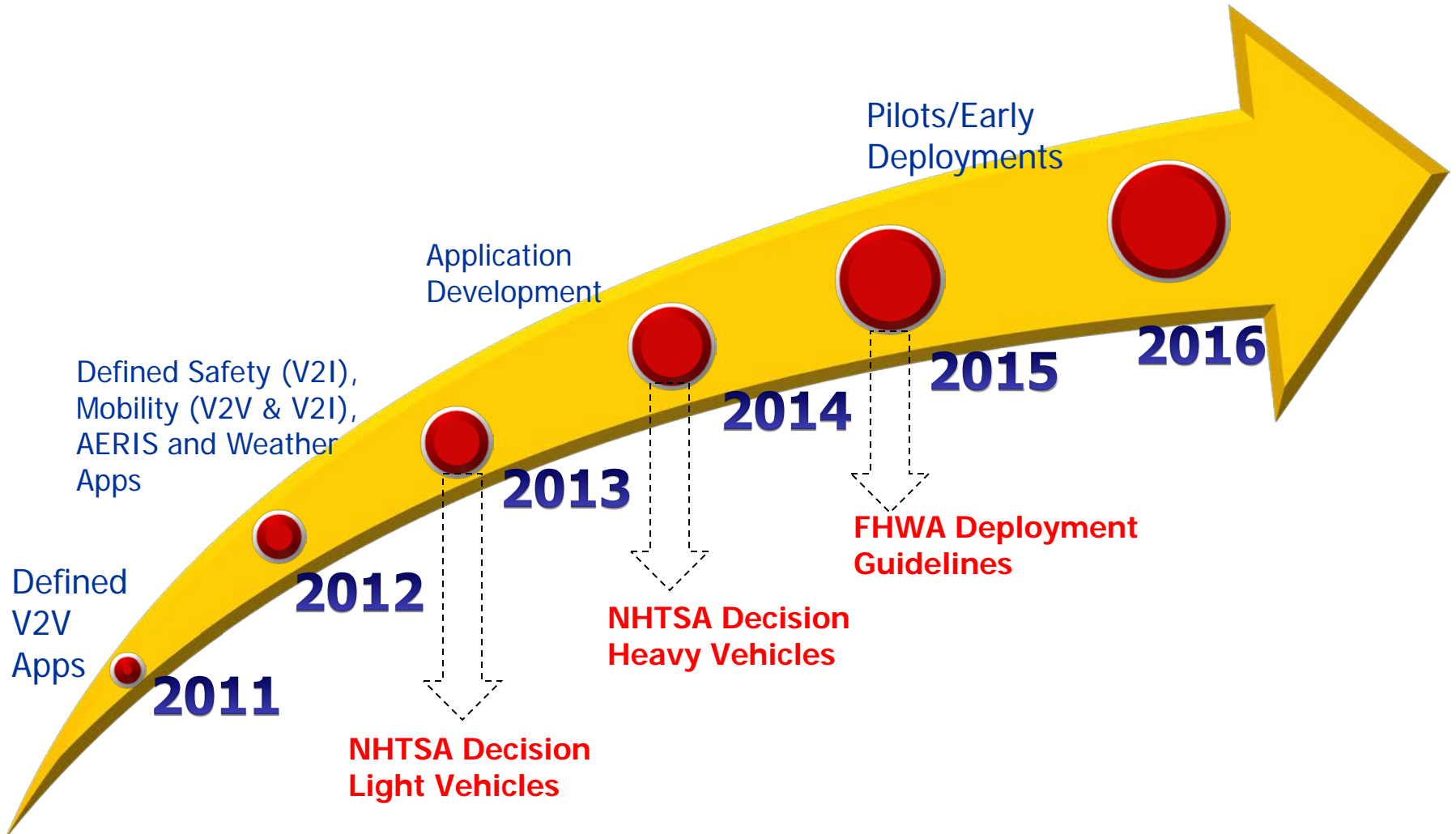


Safety Pilot Model Deployment

- ~2,800 vehicles (cars, buses, and trucks) equipped with V2V devices
- Provide data for determining the technologies' effectiveness at reducing crashes
- Includes vehicles with integrated safety applications and others that use aftermarket devices (i.e., not built into the vehicle)
- Applications to be tested include:
 - Forward Collision Warning
 - Electronic Emergency Brake Lights
 - Blind Spot Warning/Lane Change Warning
 - Intersection Movement Assist
 - Do Not Pass Warning
 - Left Turn Assist



Moving Towards Infrastructure Deployment



Infrastructure Deployment Planning

- 2015 FHWA Deployment Guidance
- National Cooperative Highway Research Program (2013 completion)
 - Benefit Cost Analysis for state and local DOTs, including funding options
 - DSRC deployment guidance for state DOTs
- National Connected Vehicle Field Infrastructure Footprint Analysis (AASHTO led, 2014 completion)
- Standardized interfaces
- Certification processes for equipment and systems
- Nationwide Security Credential Management System (SCMS)
- USDOT is working with state and local DOTs and private industry to plan for deployment

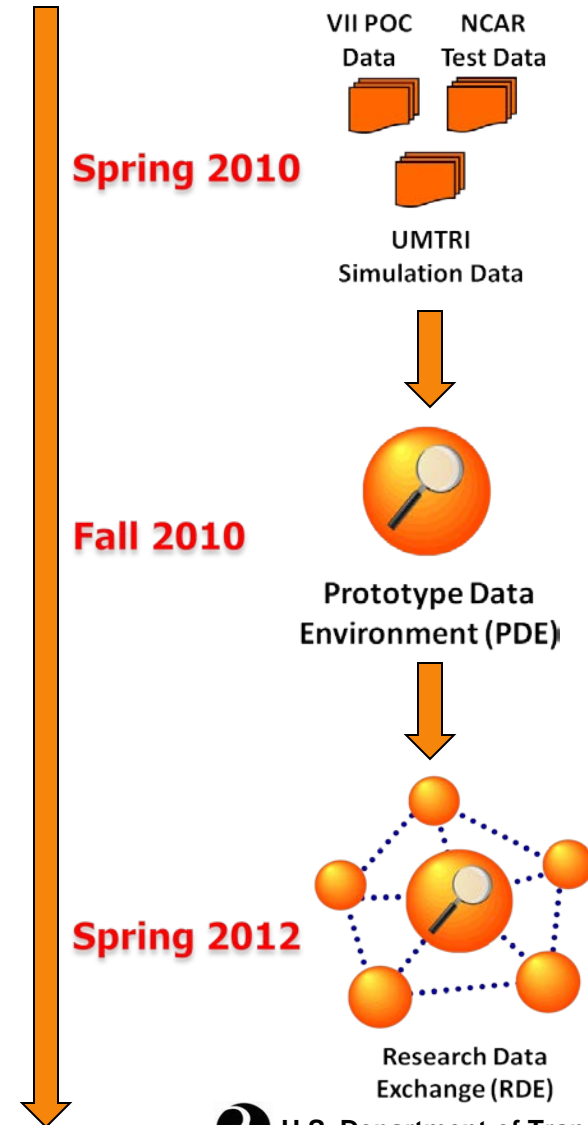


Photo Source: Thinkstock



Accomplishments & Opportunities

- **Real-Time Data Capture and Management**
 - Launched prototype Research Data Exchange (RDE) providing four well-documented multimodal data sets from San Diego, CA, Portland, OR, Pasadena, CA and Seattle, WA
- **Dynamic Mobility Applications (DMA)**
 - Completed Concept of Operations development for six key application areas: Freeway, Arterial, Transit, Freight, Traveler Information, and Emergency Response Management
 - Held Mobility Workshop in May to engage stakeholders
 - Initiated prototyping effort for Freight



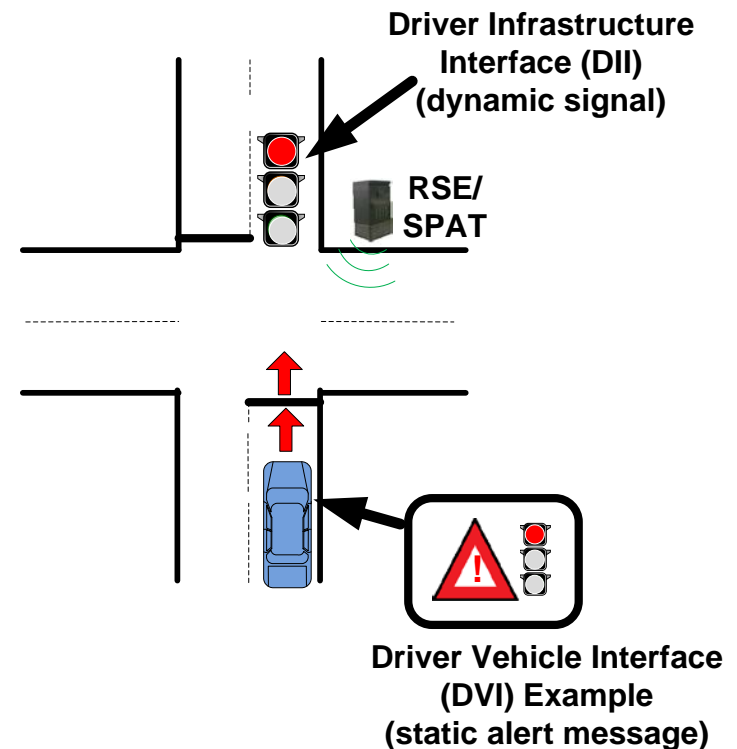
Accomplishments & Opportunities

- **Vehicle to Infrastructure Communications**

- Developed revised Signal Phase & Timing (SPaT) message set and Roadside Equipment (RSE) for Safety Pilot Model Demonstration

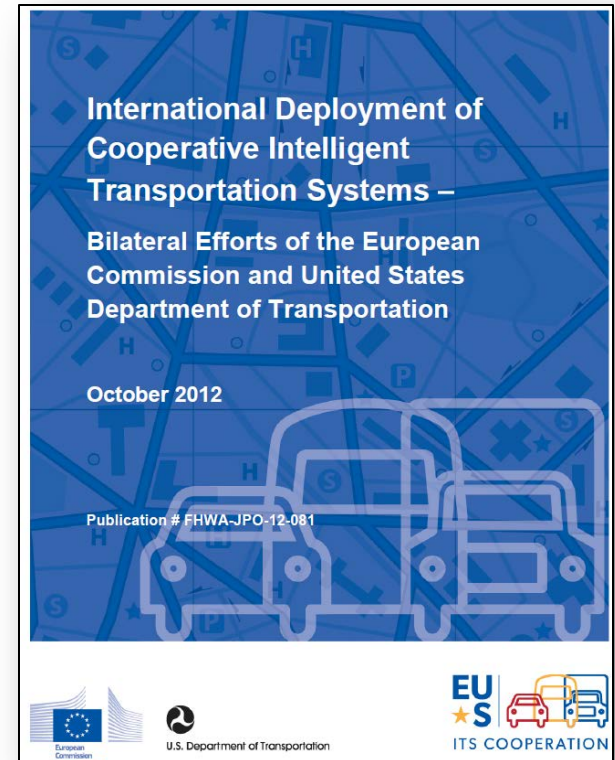
- **Safety**

- Developed systems requirements for five potential V2I Safety applications, including:
 - Red light violation warning;
 - Stop sign gap assistance;
 - Curve speed warning;
 - Spot weather impact warning; and
 - Reduced speed/work zone warning.



International Activities

- **International Standards Harmonization**
 - Focused on standards around the vehicle platform
- **Collaborative research with European Union**
 - 2012 ITS World Congress
 - EU-US Joint Showcase on Connected Vehicle
 - Published a new EU-US report highlighting our joint accomplishments and future plans in areas such as cooperative vehicle harmonization
- **Collaborative research with Japan**
 - Assess the role of probe data in systems management
 - Complete probe data project and present results at the 2013 ITS World Congress in Tokyo, Japan
- **Collaborative research with Canada**
- **Established new Memorandum of Cooperation with Korean Ministry of Land Transport and Maritime Affairs**



What's New?

- **MAP-21:**
 - **Deployment Incentives**
 - Deployment planning grants for Integrated Corridor Management (ICM) & Mobility Services for All Americans (MSAA)
 - **New Strategic Plan**
 - Exploratory Research started in 2012 & 2013
 - Offer your input at:
<http://itsstrategicplan.ideascale.com/>
- **Affiliated Test Beds**
- **Research Data Exchange**

**AN OPEN DIALOGUE ON THE
DRAFT FOCUS AND THEMES FOR
THE NEXT ITS STRATEGIC
RESEARCH PLAN**

ENGAGING STAKEHOLDERS IN THEIR DISCUSSION AND
DEVELOPMENT

<http://itsstrategicplan.ideascale.com>

www.its.dot.gov/index.htm
Final Report — December 2012
publication number FHWA-JPO-13-032

The graphic features a blue background with a binary code pattern. The text is in white and yellow. At the bottom, there is a row of four small images: a red semi-truck, a traffic light, a car in a lane, and a person on a motorcycle.

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