Connected Vehicle – Panel Discussion

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Safety Pilot Objectives

- Obtain user acceptance data
- Derive safety system effectiveness values for supporting 2013 and 2014 NHTSA agency decisions
- Understand how the system operates in a real world, highly concentrated environment
- Understand the potential role that aftermarket devices might play in accelerating benefits
- Archive data for future government and industry use

What is Safety Pilot?

A major road test and real world implementation involving:

- 73 miles of instrumented roadway with 27 roadside units in Ann Arbor, MI
- Over 2,800 vehicles equipped with a variety of device types
- Various V2V and V2I applications
- Testing of prototype security mechanisms and device certification processes
- 1 year of data collection to support 2013 NHTSA decision
- Project Ended on August 31, 2014

What Did We Learn About Infrastructure?

1. IPv6 connectivity was one of the biggest challenges to the RSE deployment and required the shifting of freeway sites

2. DSRC radio coverage ranges for the RSEs were much larger than expected

3. RSEs collected a much larger volume of data than was estimated due to the overlaps of coverage

Roadside Equipment specification needed an update (version 4.0)

What Did We Learn About In-Vehicle Devices?

1. Deploying 2,700+ devices required different installation configurations for each vehicle class and type

2. Efficient end-of-line testing (configuration/quality) and baseline performance characterization testing would have been beneficial

3. Monitoring the health of the devices in the field was challenging as not all devices had health monitoring capabilities

4. Recalling and updating deployed devices was a labor-intensive and time-intensive process

Deploying, testing, and managing 2,700+ deployed devices required an extensive amount of planning.

The Safety Pilot Was a Big Success for Vehicle Safety

- Data collection exceeded our expectations
- Regular drivers experienced proven technology
- Connectivity was achieved across various types and modes

Types of Data Collected:

- Numerical data in-vehicle
- Wireless/GPS
- External sensors

Volume of Data Collected:

- 2.3B database records
- 63,000 hours of video

NHTSA Decision on V2V for Light Vehicles

- Announced on February 3, 2014, for light vehicles
  - Primary purpose is to enable collision warnings to drivers prior to a crash
  - Based on several years of research including the safety pilot model deployment –a road test of nearly 2,800 equipped vehicles in Ann Arbor, Michigan

- ANPRM and Research Report issued on August 18, 2014
  - NHTSA Press Release

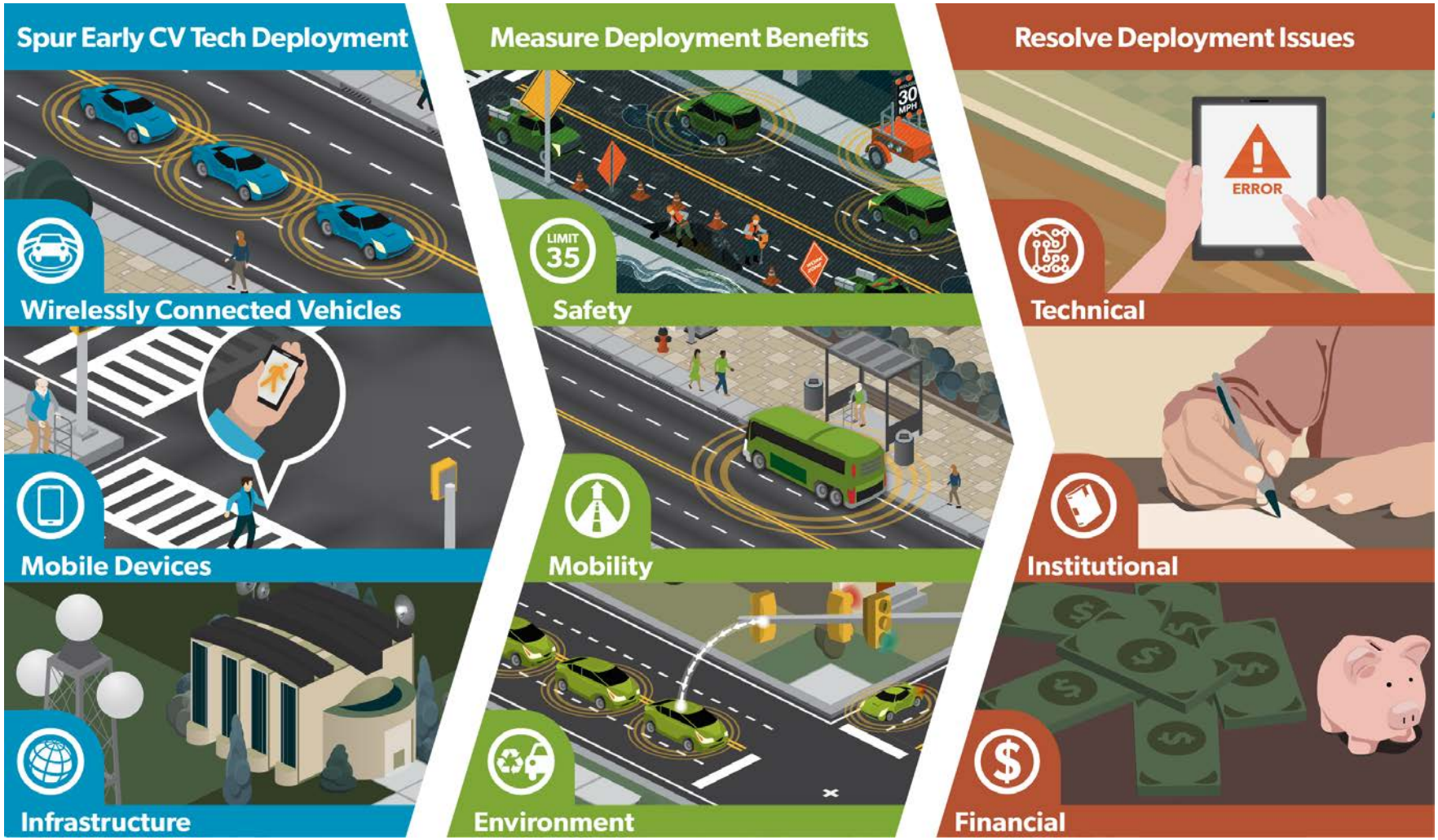
- Please Provide Comments through the Docket:
  - http://www.regulations.gov/#!docketDetail;D=NHTSA-2014-0022

U.S. Department of Transportation
Office of the Assistant Secretary for Research and Technology

CONNECTED VEHICLE PILOT
Deployment Program

ITS Joint Program Office

PROGRAM GOALS



ORGANIZING PRINCIPLES

- Pilots will be *pilot deployments*, that is, real-world environment deployments
  - If successful, deployed technologies are expected to remain as permanent operational elements

- There will be *multiple* pilot sites over time
  - Each site will have different needs, focus and applications
    - That is, pilot deployments must address a critical problem
    - The needs of each site must drive the application selection process

- Pilot deployments are expected to be both *large-scale and multi-modal*
  - *Large-scale* implies pilot deployments will have measureable impact, not a specific minimum geographic or vehicle fleet size
  - Sites will deploy *multiple applications* drawing on the products of USDOT and other connected vehicle research

Pilot Deployment Process

- **Pilot Deployment Concept Development Process**
  - Identify Local Needs
  - Set Performance Goals
  - Select CV Applications That Work Together Meet Those Goals

- **USDOT Sample Pilot Concepts from Hypothetical Locations**
  - Hypothetical, but realistic examples of localities applying the pilot deployment concept development process

SCENARIO: GREYPOOL COUNTY

~ Improving Safety and Mobility in a Rural Area ~

Increase Accessibility

- Dynamic Transit Operations

Improve Safety

- Red Light Violation Warning
- Stop Sign Gap Assist
- Left Turn Assist

Informing Drivers During Bad Weather

- Weather Response Traffic Information

Synergies among applications increase benefits and reduce costs

SCENARIO: I-876 CORRIDOR

~ Improving Freight Movement in an Inter-State Corridor ~

Improve Freight Productivity

- Freight Advanced Traveler Information System
- Drayage Optimization
- Freight Signal Priority

Improve Truck Safety

- Curve Speed Warning
- Do Not Pass Warning/Lane Change Warning

Synergies among applications increase benefits and reduce costs

CV Pilots Deployment Schedule and Resources

- Proposed CV Pilots Deployment Schedule

Schedule Item	Date
Regional Pre-Deployment Workshop/Webinar Series	**Summer-Fall 2014**
Solicitation for Wave 1 Pilot Deployment Concepts	**Early 2015**
Wave 1 Pilot Deployments Award(s) Concept Development Phase (6-9 months) Design/Build/Test Phase (10-14 months) Operate and Maintain Phase (18 months)	**September 2015**
Solicitation for Wave 2 Pilot Deployment Concepts	**Early 2017**
Wave 2 Pilot Deployments Award(s) Concept Development Phase (6-9 months) Design/Build/Test Phase (10-14 months) Operate and Maintain Phase (18 months)	**September 2017**
Pilot Deployments Complete	**September 2020**

- Resources
  - ITS JPO Website: http://www.its.dot.gov/
  - CV Pilots Program Website: http://www.its.dot.gov/pilots

For More Information

www.its.dot.gov

Safety Pilot

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