



UNITED STATES
DEPARTMENT OF TRANSPORTATION

USDOT Safety Pilot Model Deployment Overview

October 14, 2013
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On behalf of U.S. DOT

Today's Presentation

- Model Deployment Overview
- Data Collection during Model Deployment



MODEL DEPLOYMENT OVERVIEW

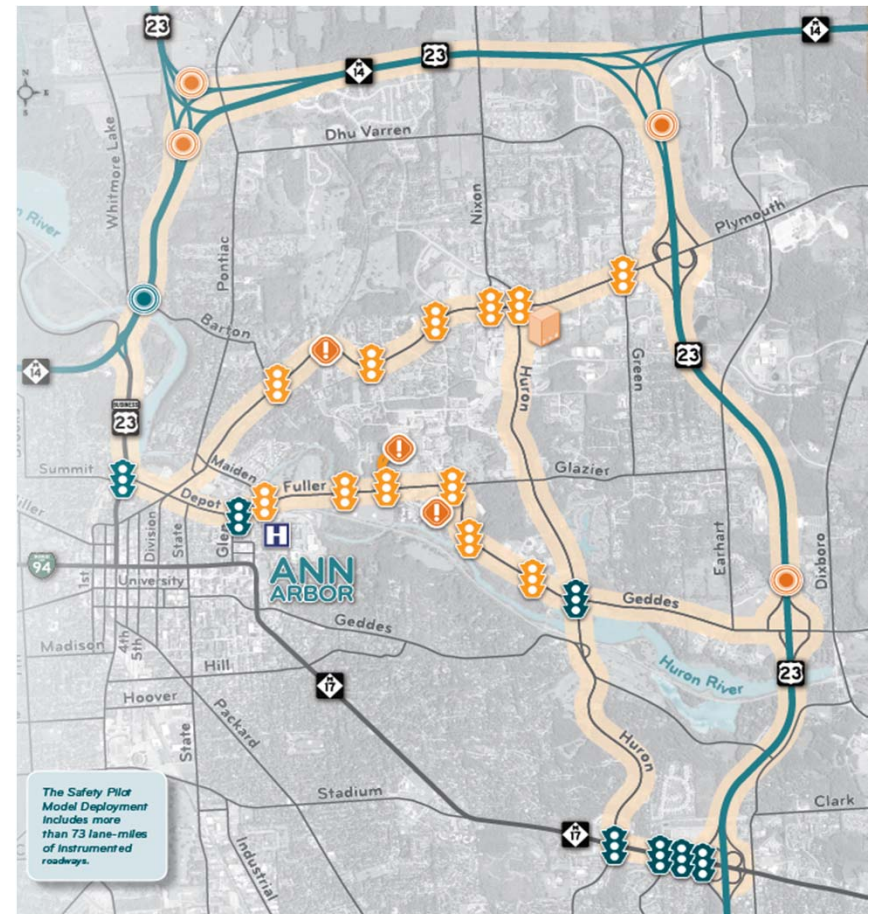
Safety Pilot Objectives

- 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

Safety Pilot Site Characteristics

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



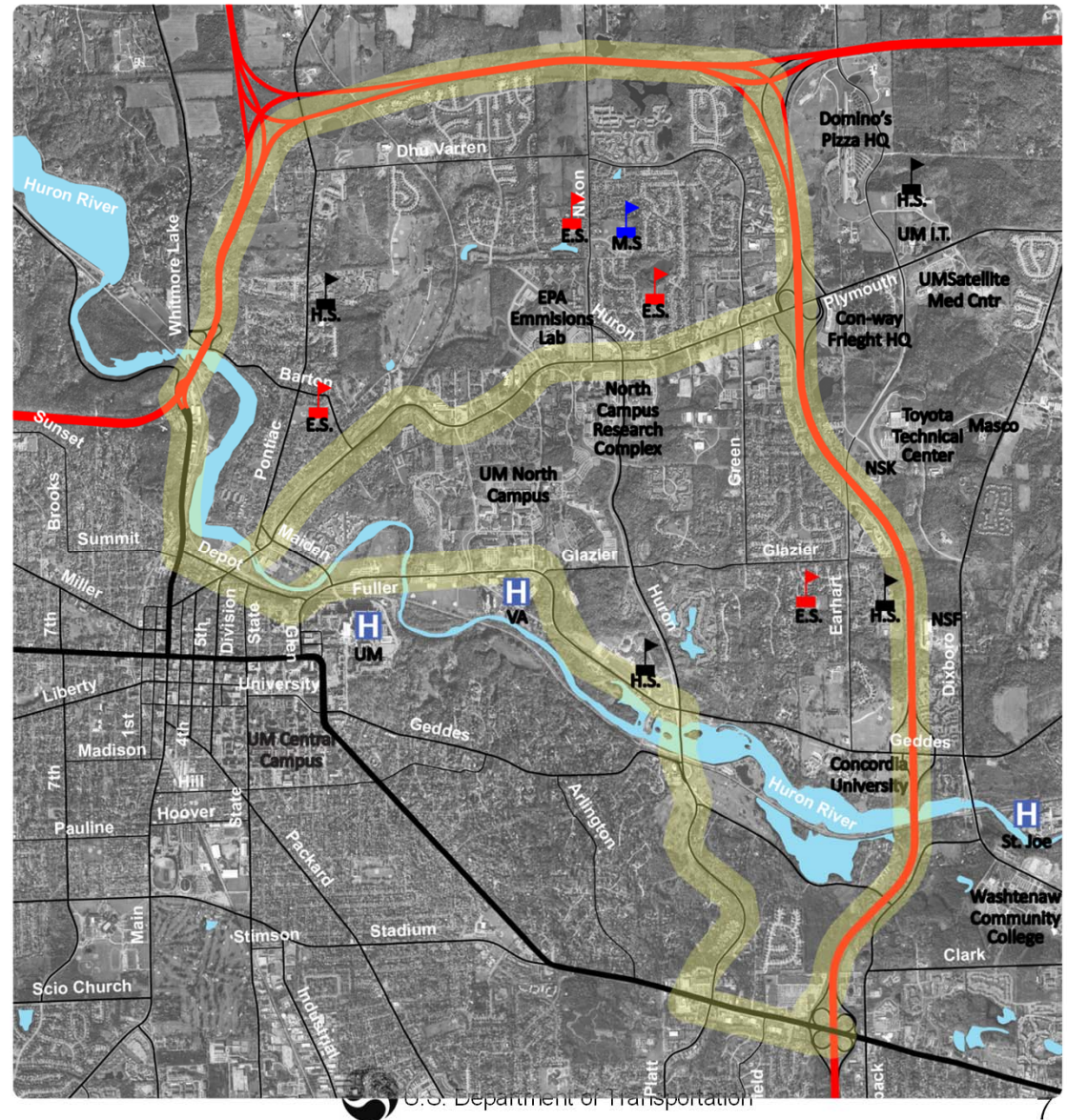
Vehicles & Devices Deployed

- 2,362 Vehicle Awareness Devices
- 289 Aftermarket Safety Devices
- 64 Integrated Light Vehicles
- 19 Integrated / Retrofit Heavy Vehicles
- 3 Retrofit Transit Vehicles
- 26 RSEs

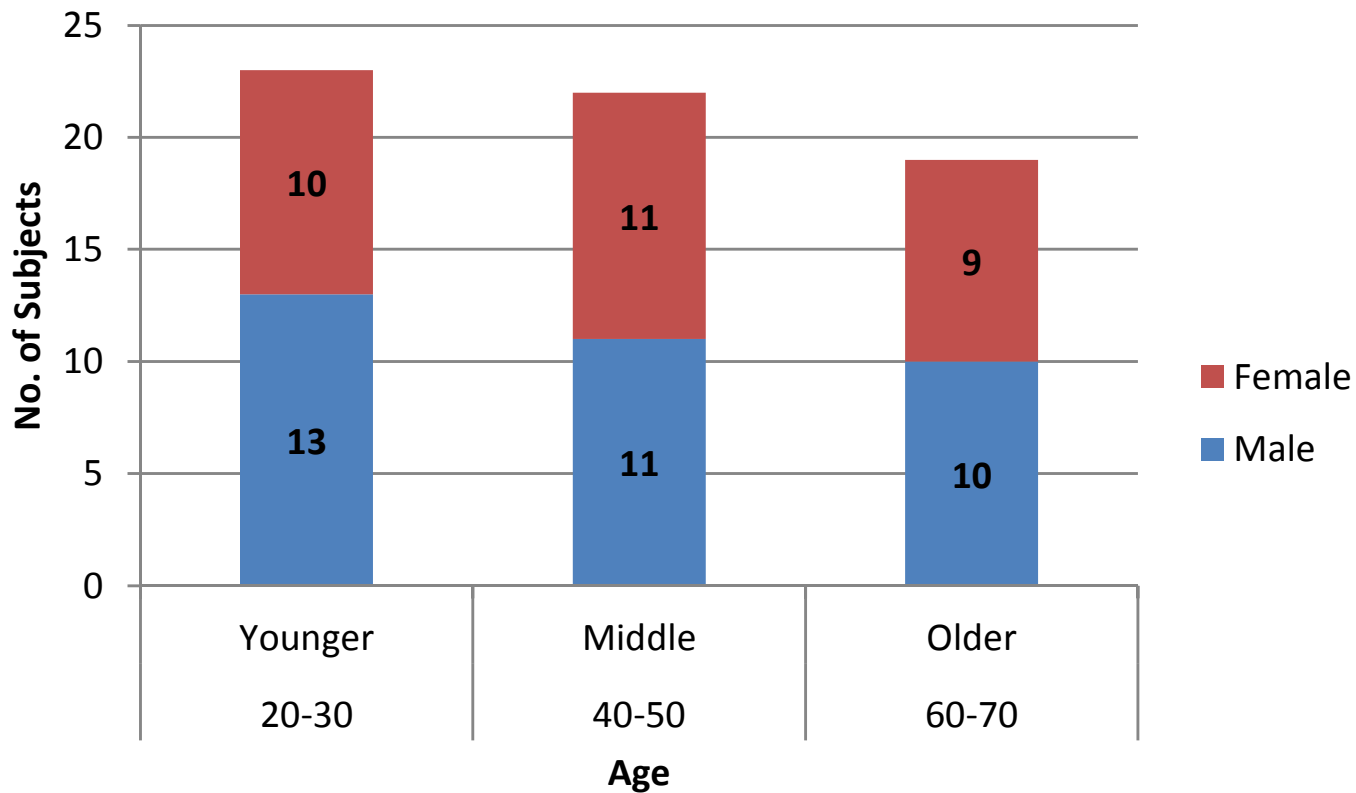


Driver Recruitment

- Approaches to Recruitment
 - UoM Medical Center
 - Ann Arbor city schools
- Incentives
 - \$200 per participant
 - Donated to schools
- Results
 - Over 4,000 signed up



Drivers by Age and Gender



Total of 64 subjects participated in the first six months of Model Deployment

DATA COLLECTION DURING MODEL DEPLOYMENT

Monitoring the Data Collection

- Simulation of Estimates

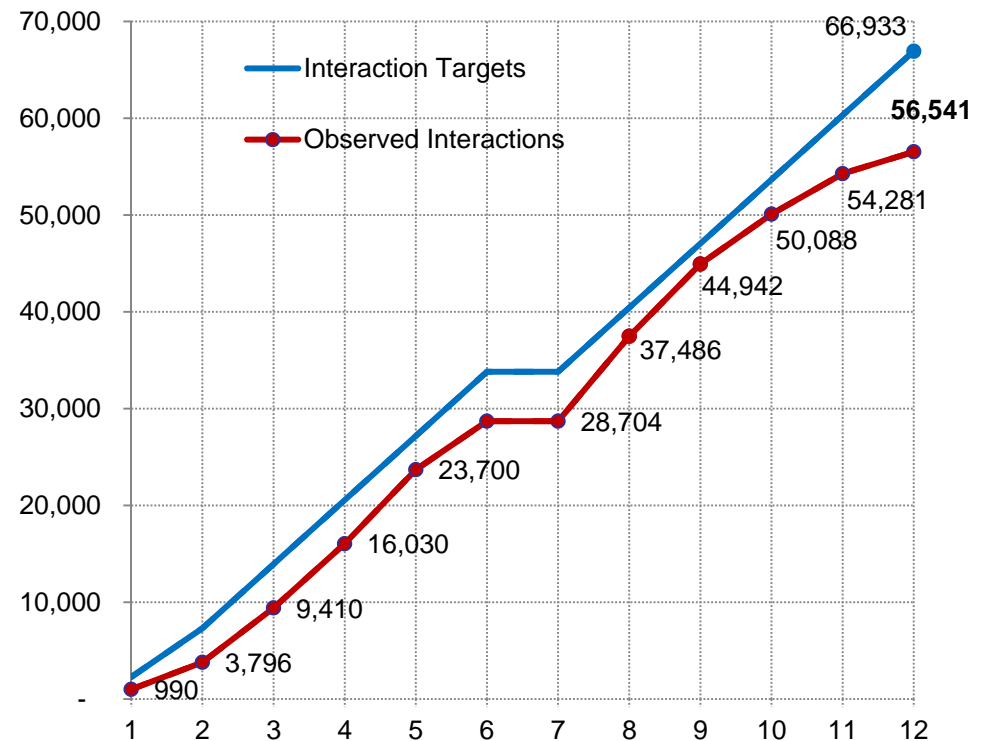
- ☐ Utilized a traffic simulation model to estimate expected number of interactions
- ☐ Interactions are communications between integrated light vehicles and other equipped vehicles within close proximity

- Real-Time Monitoring

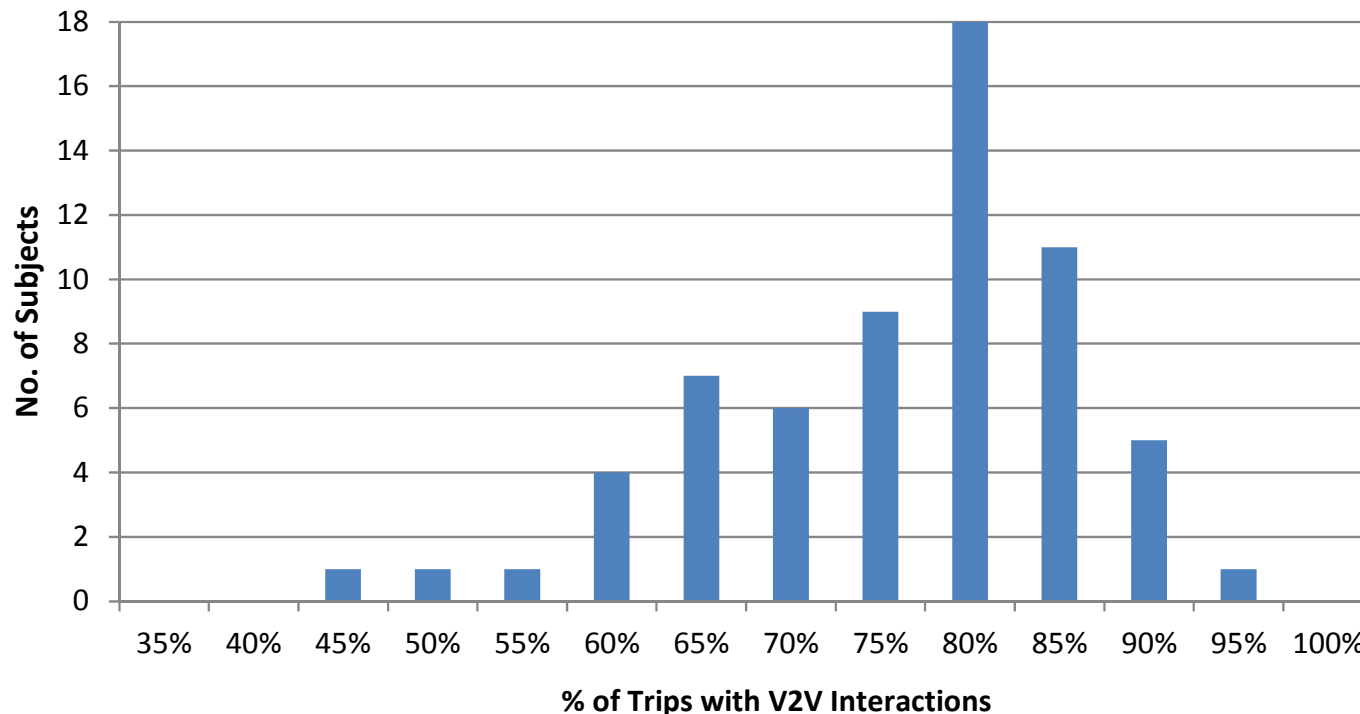
- ☐ All vehicles with data acquisition systems were remotely monitored via cell link

- Total Interactions

- ☐ Observed interactions were within 15% of expected interactions
- ☐ Indicates successful experimental design



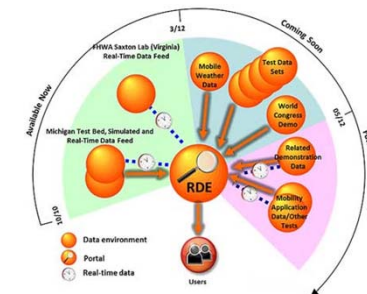
Frequency of V2V Interactions



- Majority of drivers had interactions with other V2V equipped vehicles 4 out of 5 trips
- Indicates a successful experimental design for generating interactions

Data Harvested and Transferred

- 12 Months of Data Collected
 - In-vehicle dynamics, GPS, V2V (rel. positioning, alerts)
 - Video data
 - Includes integrated light vehicles, ASDs, Heavy Vehicles and Transit Vehicles
- Data transferred to IE
 - Conducted analysis of system capabilities on dataset
- Data transferred to Real-Time Data Capture Program
 - Archiving data for research – Research Data Exchange (RDE)



Continued Data Collection – 6 Month Extension

- Safety Pilot extended through February 2014
- Major activities conducted during extension
 - Continue VAD, ASD, RSD operations
 - Support Transit operations
 - Data collection
 - LV (VADs & ASDs), Heavy Truck RSDs, Buses, Motorcycles, RSEs
 - Maintain and Update RSEs
 - Complete installation of SPaT on Plymouth Road,
 - Complete installation of 3 highway RSEs
 - VAD and ASD device characterization
 - Data collection to understand device installation/configuration aspects and relationship to BSM transmissions.

Questions and Additional Information



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