



UNITED STATES
DEPARTMENT OF TRANSPORTATION

Moving Forward with New Technologies



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OVERVIEW

- Overview of the Connected Vehicle Program
 - What is a Connected Vehicle
 - Safety Pilot
 - Mobility Program
 - Policy Issues
- Other Rural focused ITS Activities.
- MAP-21 Summary and Impacts

Today

Safety

- 32,788 highway deaths in 2010
- More than half these deaths in Rural areas
- 6,000,000 crashes/year
- Leading cause of death for ages 4 to 34



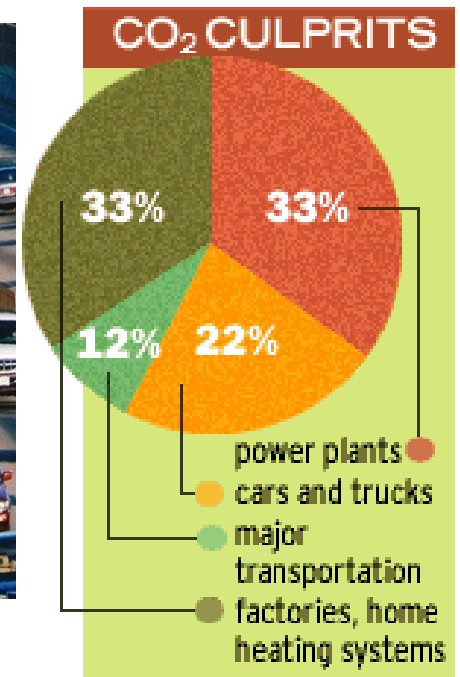
Mobility

- 4,200,000,000 hours of travel delay
- \$80,000,000,000 cost of urban congestion

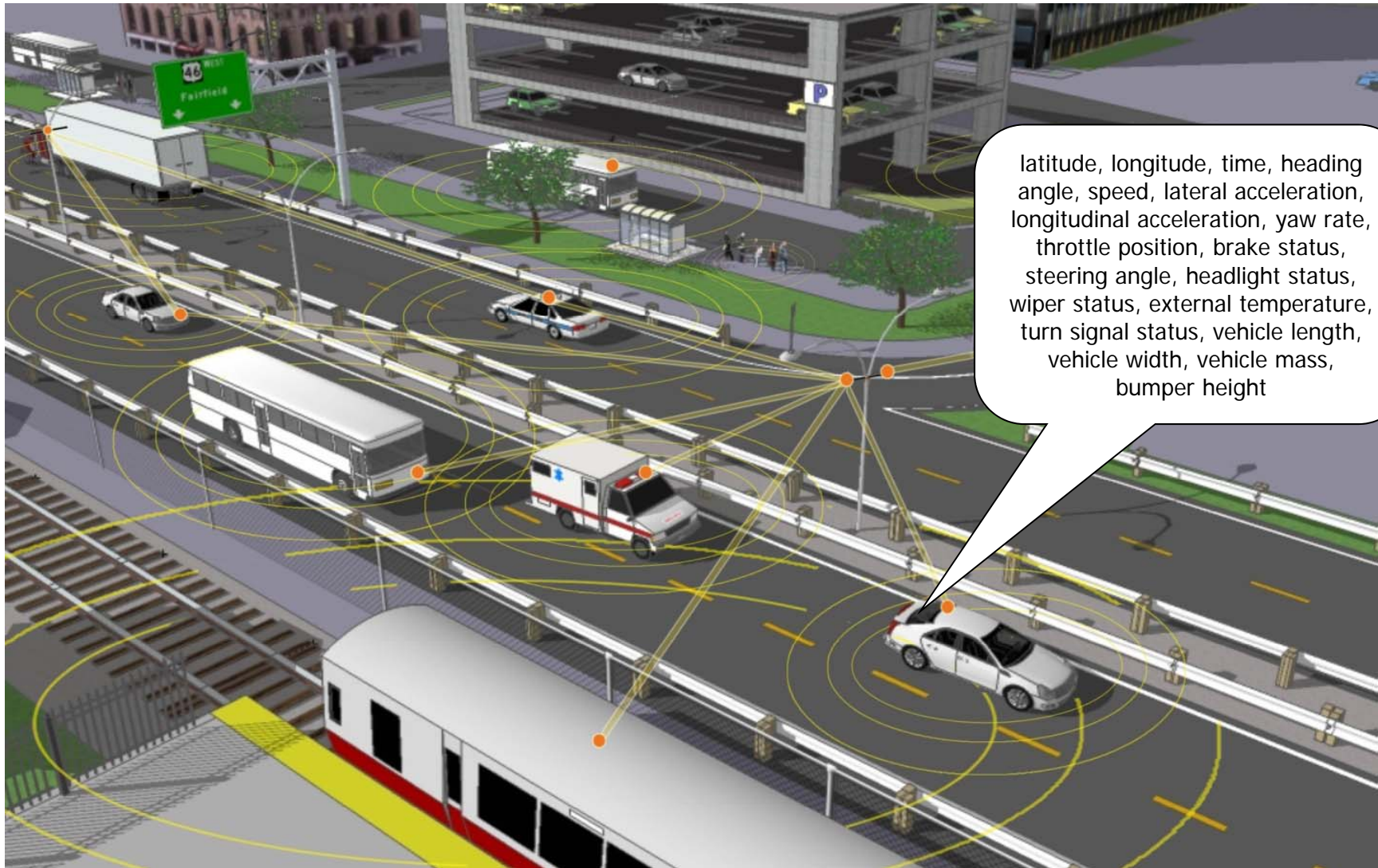


Environment

- 2,900,000,000 gallons of wasted fuel



What is a Connected Vehicle?



Why It Matters

Up to **80%** of non-impaired crash types may be impacted by connected vehicle technology

Source: NHTSA

Based on initial estimates & studies. Actual benefits are not determined at this time.

Key Safety Program Objectives

- 2013 Decision on Vehicle Communications for Safety (light vehicles)
- 2014 Decision on Vehicle Communications for Safety (heavy vehicles)
- 2015 Infrastructure Implementation Guidance



NHTSA Agency Decision Options: 2013

Rulemaking on minimum performance requirements for vehicle communications for safety on new vehicles

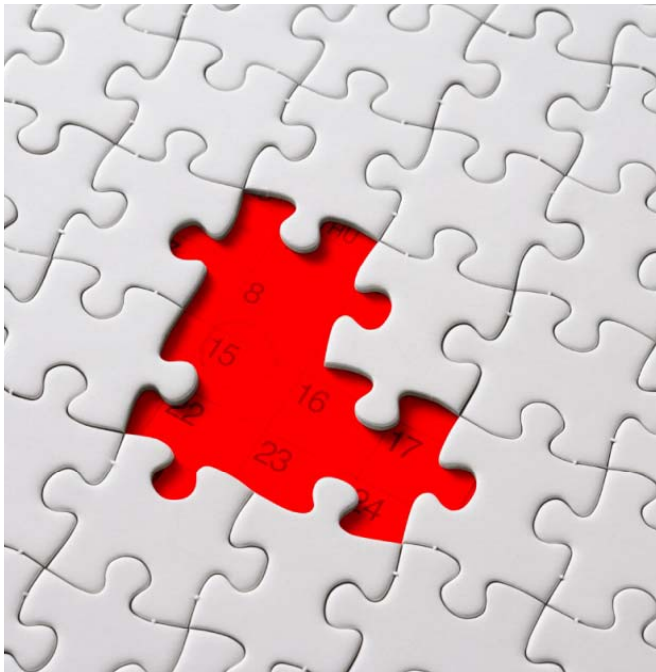


Image: istock.com

Inclusion in NHTSA's **New Car Assessment Program** to give car makers credit for voluntary inclusion of safety capability in new vehicles

More research required

Key factor will be the need for, and timing of, a **security system**

Benefits Data: Safety Pilot & Modeling

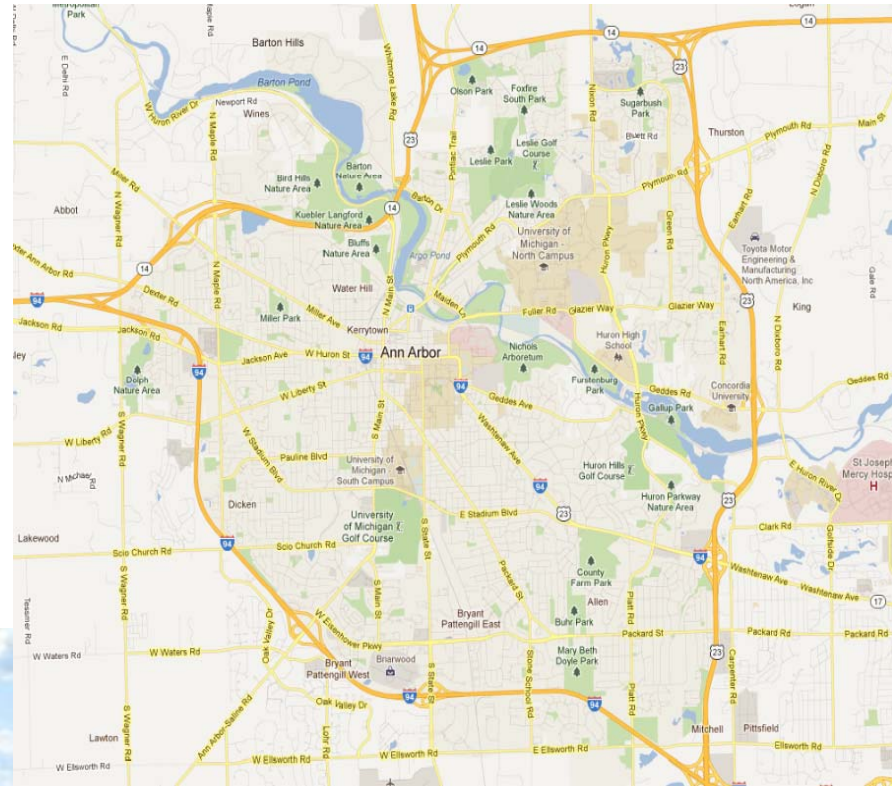


SAFETYPILOT

Safety Pilot Model Deployment

Ann Arbor, MI

August 21, 2012, 1PM



Connected Vehicle Safety Program Partners and Contractors

Vehicle Manufacturers



USDOT



Academia



Public Agencies



Associations/Standards Developers



Industry



Safety Applications

V2V

- Forward Collision Warning (FCW)
- Emergency Electronic Brake Light (EEBL)
- Blind Spot/Lane Change Warning (BSW/LCW)
- Do Not Pass Warning (DNPW)
- Intersection Movement Assist (IMA)
- Left Turn Assist (LTA)



V2I

- Curve Speed Warning (CSW)
- Cooperative Intersection Collision Avoidance System for Violations (CICAS-V)

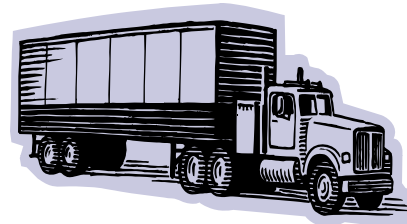


Safety Pilot Model Deployment

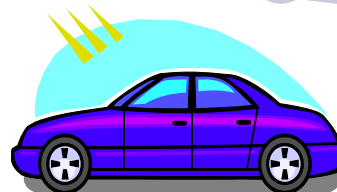
- Major road test and real world implementation involving:
 - Approximately 3000 vehicles
 - Multiple vehicle & device types
 - Roadside infrastructure
- Also to test
 - Prototype security mechanisms
 - Device certification processes



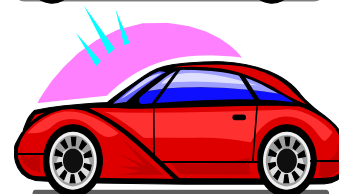
Integrated Vehicles



Trucks & Buses



Aftermarket Devices



Vehicle Awareness Devices



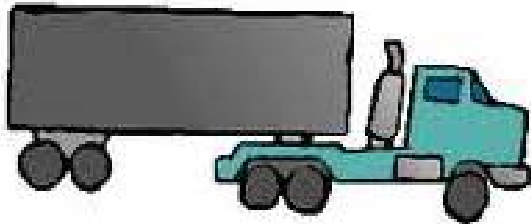
Roadside Infrastructure



Safety Pilot Model Deployment



2,564



169 = 2,836



103

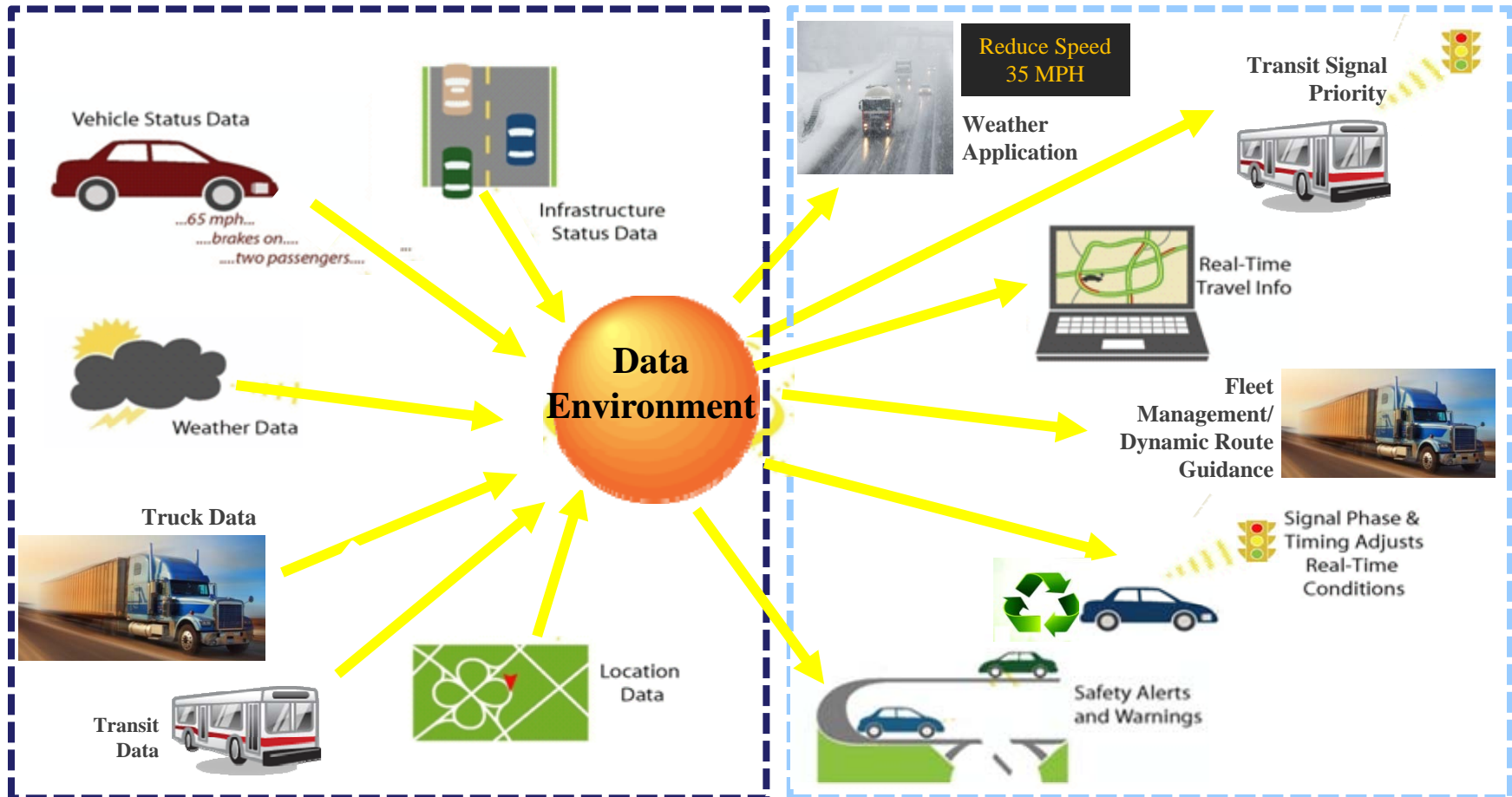
Connected Vehicles are an Enabler



Mobility Program

Real-time Data Capture and Management

Mobility Applications



Policy Issues

Policy Opportunities & Challenges

- USDOT Authority
 - USDOT **has sufficient *current* legal authority** to regulate or support implementation of many critical aspects of a connected vehicle environment, including:
 - Equipment in new vehicles
 - Aftermarket devices
 - Security system
 - USDOT **does *not* have legal authority** to require States to install infrastructure
- Privacy
- Business Models
 - Private
 - Public/private
 - **Fully public – *unlikely*** given current funding constraints and trends toward more private sector transportation funding

Policy Issues

Policy Opportunities & Challenges

- Privacy/
Cyber security
- Governance
- Funding/
Sustainability
- Data ownership
- Interoperability
- Risk/
Liability
- Implementation

Successful Together



Image: istock.com

Stakeholders

- Public/consumers
- Automakers
- Equip. Suppliers
- Public agencies
- Business/Industry
- Interest groups
- Innovators
- Academia
- ..and many more!



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Other Rural Focused ITS Activities

- Multistate Corridor Operations and Management Awards**

Project	Description	Funding
Great Northern Corridor (MT, ID, MN,ND)	Multistate Planning and Development Study	\$300K
Wisconsin DOT (IL, IN, MN, WI, Ontario, CN)	Work Zone and Traveler Information across Corridor using an innovative, regional planning process	\$900K
North/West Passage Corridor Coalition (WA, ID, MT, WY, ND, SD, MN)	Rural emphasis on multi-corridor traveler information	\$800K
West Coast Corridor Clean, Green and Smart Corridor Development (AL, WA, OR, CA)	Alternative Fuel study across a corridor	\$400K
I-15 Mobility Alliance (NV, UT, CA)	Multi-modal real time travel dissemination using GPS and focused on rural setting	\$1.5M



Other Rural Focused ITS Activities

- **Smart Roadside**
 - Involves:
 - Universal Identifier
 - Wireless Roadside Inspection
 - Truck Parking
 - Virtual Weigh Station
 - Con Ops developed, going into prototype testing
- **Truck Parking** - SAFETEA-LU Section 1305 Truck Parking Facilities Program. Over \$33M awarded, in 5 projects, to parking space construction projects in and large scale ITS based systems (California, I-95 from Connecticut to North Carolina, Michigan, Minnesota, and Wisconsin).
- **Upcoming Rural ITS Gap Analysis Study**



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MAP 21 – Summary

A brief overview of ITS - related impacts of MAP - 21, Division E, TITLE III

Key Data Points defining MAP-21:

- Signed into law - July 6, 2012
- Duration - 27 months
- Effective dates October 1, 2012 - September 30, 2014
- Until then: FY12 Extension of SAFETEA-LU July 1 - September 30, 2012
 - 3 additional months of funding for existing programs (\$13 Billion)
- MAP-21 extends the Highway Trust Fund and Fuel Tax collection authority through September 30, 2016
- Two fiscal years of funding: \$105 B for FY 13 and FY 14; combined with \$13 Billion = Total \$118 Billion
- ITS Program Contract Authority: \$100 Million (obligation limitation applies)



MAP-21 Title III Impacts on ITS

USE OF FUNDS FOR ITS ACTIVITIES

Deployment strategy emphasizes adoption of ITS technologies that will improve performance of National Highway System in areas such as:

Traffic Operations

Emergency Response

Incident Management

Surface Transportation Network Management

Traffic Flow Information

Congestion Management

by accelerating adoption of innovative technologies thru use of:

(A) demonstration programs

(B) grant funding

(C) incentives to eligible entities

(D) other tools/strategies or methods that will result in the deployment of innovative ITS technologies



MAP-21 Title III Impacts on ITS

OUTREACH FUNDING

- MAP-21 does not address Outreach funding.
 - IMPACT: Previous limit on Outreach funding removed

PROGRAM REPORTING

- MAP-21, Title III specifies one comprehensive and detailed plan during 27 month effective period of legislation that addresses the manner in which incentives may be adopted, as appropriate, through existing deployment activities carried out by surface transportation modal administrations
 - IMPACT: Report review may take a year; time compression is a challenge.

PURPOSES

- MAP-21, TITLE III adds Purpose statement: program execution must ensure a systems approach that includes cooperation among vehicles, infrastructure and users
 - IMPACT: Use of systems approach that pulls together vehicles, infrastructure and users is mandated



MAP-21 Title III Impacts on ITS

ITS PROGRAM ADVISORY COMMITTEE:

- MAP-21, Title III adds a requirement for member qualifications: (L) “members with expertise in planning, safety, telecommunications, utilities, and operations”
 - IMPACT: Review ITS Program Advisory Committee member qualifications
- Requirements remaining in effect:
 - Annual ITS Program Advisory Committee Report to Congress
 - IMPACT: February 1, 2013 is first due date for report
 - Special Rule (Exemption from Paperwork Reduction Act for reporting of test, deployment, or program assessment activities i.e., evaluation-related surveys, etc) remains in effect
 - IMPACT: No change



MAP-21, Title III Impacts on ITS

RESEARCH AND DEVELOPMENT

- Federal Share payable on account of projects and activities carried out under MAP-21, TITLE III shall not exceed 80% remains unchanged
 - IMPACT: None

NATIONAL ARCHITECTURE AND STANDARDS

- MAP-21, Title III does not address architecture implementation but specifies: the Secretary shall develop and maintain a national ITS architecture and supporting ITS standards and protocols to promote the use of systems engineering methods in the widespread deployment and evaluation of intelligent transportation systems...
 - IMPACT: Project planners and management teams must consider systems engineering approaches in ITS project management



MAP-21, Title III Impacts on ITS

USE OF STANDARDS DEVELOPMENT ORGANIZATIONS

- New SDO membership requirement: to ensure that SDO memberships are comprised of, and represent, the surface transportation and intelligent transportation systems industries
 - IMPACT: SDO membership review needed to ensure compliance

STANDARDS FOR NATIONAL POLICY IMPLEMENTATION

- New section provides Secretary legal authority for establishing a new class of standards: If necessary for implementation of a nationwide policy relating to user fee collection or other capability requiring nationwide uniformity, the Secretary may establish and require the use of that standard
 - IMPACT: Department gains flexibility in imposing standards relating to collection of user fees

Expert Panel:

- Expert panel requirement removed.



MAP-21, Title III Impacts on ITS

SECRETARIAL DISCRETION

MAP-21, Title III:

- Preserves the Secretary's discretion in granting an exemption from conformity requirements for projects designed to achieve specific research objectives outlined in the national intelligent transportation system program plan or the surface transportation research and development strategic plan...
- But removes the Secretary's discretion in authorizing exceptions for: The upgrade or expansion of an intelligent transportation system in existence on the date of enactment of SAFETEA-LU...
 - IMPACT: None

NEW REPORT REQUIREMENT ON V2V & V2I DEPLOYMENT

- Within three years (July 2015) program must submit report to House and Senate
 - Assess the status of DSRC
 - Analyzes gaps in technology and applications
 - Defines recommended implementation approach for DSRC
- Report must be reviewed by National Research Council + independent third party
 - IMPACT: Report review may take a year; time compression is a challenge

FOR MORE INFORMATION

www.its.dot.gov



U.S. DOT will host Free Public Meeting and Webinar for the Integrated Dynamic Transit Operations (IDTO)

The IDTO public meeting will bring stakeholders together as part of an interactive forum. [Read more...](#)

Spotlight

- ITS Architecture Made Easier Using Turbo Architecture: An Overview of NHT's New Web-based Turbo Architecture Course 1/10/12
 - U.S. DOT Announces Public Meeting for Two Connected Vehicle Concepts for Traffic Management 1/9/12
 - Letter from the Director Congratulating ITS JPO Staff Award Winners 12/23/11
- [More News>>](#)

Our Current Research

Applications Mode-Specific Cross-Cutting

- ▶ Vehicle-to-Vehicle Safety
- ▶ Vehicle-to-Infrastructure Safety
- ▶ Real-Time Data Capture
- ▶ Dynamic Mobility Applications
- ▶ Environment
- ▶ Road Weather

[More >>](#)



Procurement Opportunities

As we implement the ITS Research Strategic Plan, open procurements may become available through a variety of solicitations. [More >>](#)

Public Meetings

[View >>](#)



SAFETYPILOT

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U.S. Department of Transportation