



Welcome to “The Integrated Truck Program”

- If the webinar system does not call you automatically, please dial 1-800-201-2375 and enter passcode 710737
- The webinar will begin at 1:00 EDT and last approximately 90 minutes
- Presentations by:
 - **Susan Alt**, Vice President of Customer and Industry Relations, Mack and Volvo Trucks North America
 - **Lance Hagler**, Director of Safety, Con-way Freight
 - **Tom Kearney**, Freight Operations Program, Federal Highway Administration
- Audience Q&A – final 20 minutes of the seminar, during the presentations you may type questions into the chat area of the screen
- After the seminar the presentations will be posted on the TIMTC website at www.freightmobility.org



The TIMTC Mission:

- To improve the knowledge base of both private and public sector stakeholders of freight transportation issues and possible technology solutions
- To ensure a working forum of industry stakeholders that can coordinate existing and planned research initiatives



U.S. Department of Transportation





TIMTC is focused on Intelligent Transportation Systems (ITS) Programs, including:

- Truck Connected Vehicle Technologies
 - Imminent Crash Safety Focused Technologies
 - Enhanced Mobility Applications
- Smart Roadside Initiative (SRI)
 - Truck Parking
 - Universal Truck ID
 - Virtual Weigh Station/E Permitting
 - Wireless Roadside Inspections (WRI)



TIMTC 2011 Annual Meeting

October 17-18, 2011

- Will be held in conjunction with ATA's MC&E at the Gaylord Hotel and Convention Center in Dallas, Texas
- Attend business and educational sessions, tour ATA's Exhibit Hall and network with motor carrier executives and industry suppliers
- Live Nemo Show Broadcasts Monday and Tuesday
- Speakers will include:
 - Anne S. Ferro, Administrator, FMCSA
 - Ronald Medford, Deputy Administrator, NHTSA
 - Greg Nadeau, Deputy Administrator, FHWA
 - Chad England, Chief Operating Officers, C.R. England
 - Doug Hathaway, Vice President, Transportation Division, Maxum Specialty Insurance Group
 - Major Ron Cordova, New Mexico Department of Public Safety
 - Plus other top industry executives
- **FREE REGISTRATION** available at www.freightmobility.org



Examples of ITS in progress

Susan Alt

Vice President, Strategy & Industry Relations

Intelligent Transportation Solutions will benefit society as a whole

- Improves transportation safety, mobility, & homeland security and enhances productivity through the use of advanced IT and communications technologies.
- Common communication standards are needed
 - Balanced with OEMs liability for its product
 - Not in competition for HOW data communicated, but WHAT is communicated
- Development of communication standards must be done via a collaborative effort
 - Businesses are in the habit of making money via a differentiated value added solution!



Heavy Trucks and ITS make good business and environmental sense

- Heavy Duty Truck OEMs & SAE have developed common communication & diagnostic standards (e.g. SAE J1939) in Commercial Vehicles
 - Result. Any brand of truck can “talk” to another
 - Practical. In NA, med/heavy trucks build 300k/year, cars produce 6,000k/year
- Environmentally, Heavy trucks consume the vast majority of commercial trucks’ fuel
 - Minimal reductions to improve FE via ITS have dramatic impact

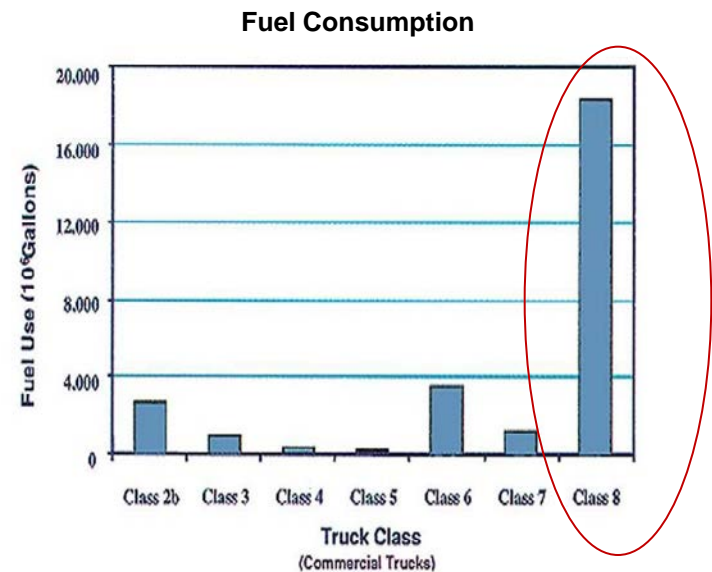


Fig. 3.2. Annual fuel use by commercial trucks (based on VIUS data).

Many can benefit from a “Connected Truck”

Fleet operators

Improved transport efficiency and cost optimization, driver time management, cargo management & security/safety

Drivers & families

Keeping in touch with messaging

Cargo owner

Monitoring of location & status etc.



Authorities

Road charging, emission control, dangerous goods monitoring, e-call (e-safety), anti-theft solutions etc.

Finance/insurance companies

Focus on minimizing risk by monitoring & control – security & usage

3rd party service & software companies

Integration of 3rd party solutions

Truck manufacturers/dealer

In order to manage up-time, increase parts & service sales and improve customer relationship management

ITS as an industry helping our economy in other ways.....

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Intelligent Transportation Employment to Expand in U.S., Group Says

By Tim Higgins - Aug 10, 2011 6:00 AM ET

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The intelligent transportation system industry, the information and communication technologies that reduce traffic congestion and improve safety, may expand U.S. employment by as many as 6,400 jobs annually through 2015, an industry group said.

The Intelligent Transportation Society of America, a Washington D.C.-based advocacy group for technologies in ground transport, said the industry generated \$48 billion in revenue in 2009 in the U.S. and should increase \$2.7 billion to \$4.2 billion annually through 2015, the organization said.

Volvo has been actively research and developing ITS solutions across the globe

- USA:

- Trusted Truck®

- CVII

- Europe:

- CVIS, SAFESPOT, CAR 2 CAR Comm. Consortium



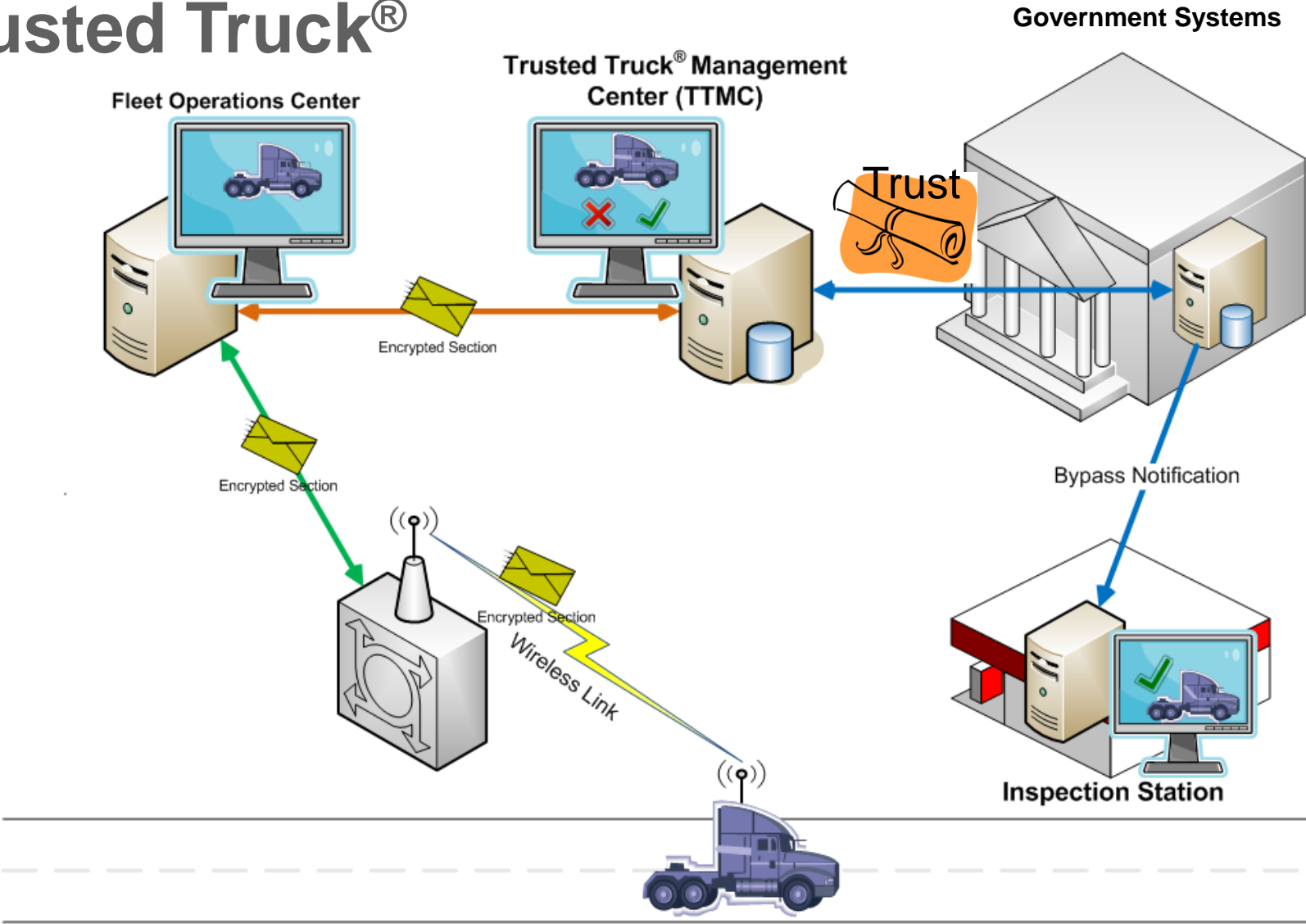
Trusted Truck®

NTRCI

NATIONAL TRANSPORTATION
RESEARCH CENTER, INCORPORATED

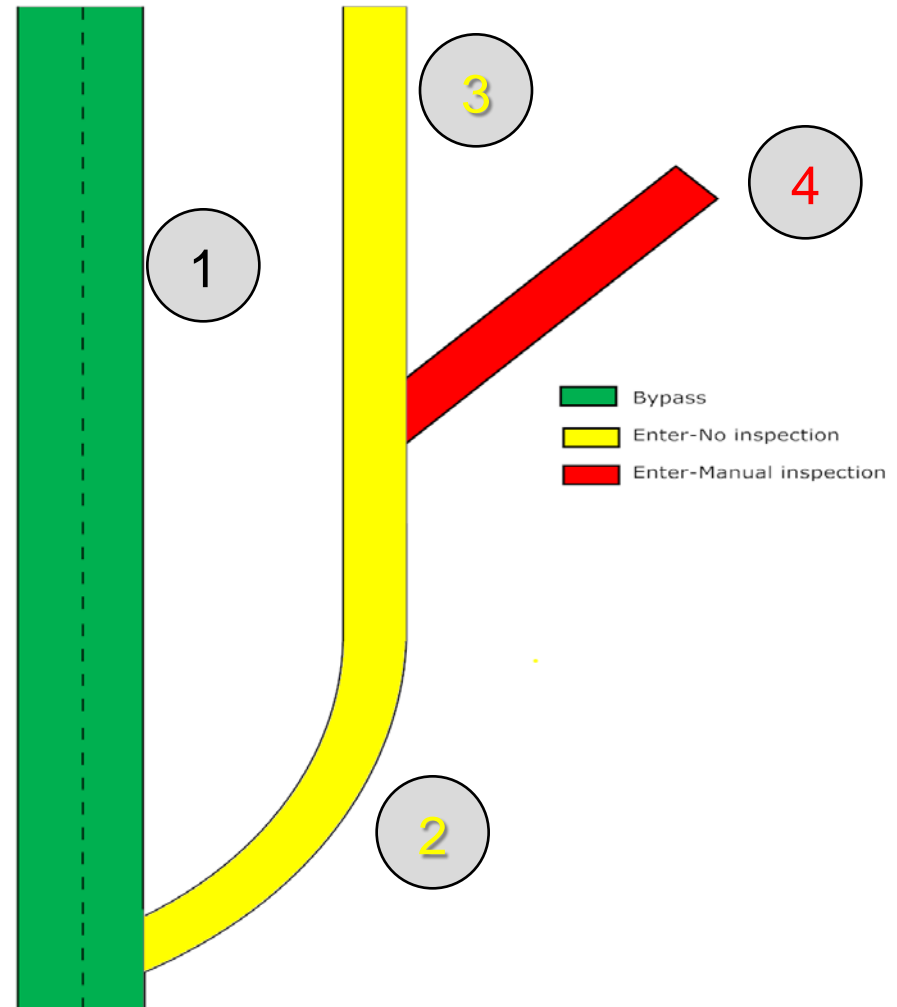


Trusted Truck[®]



The Inspection Zone

- **1. Bypass (Trusted)**
 - **Trusted Truck[®]** allowed to bypass station
- **2. Enter as general truck population (Not Trusted)**
 - **3. Pass**
 - **Passed weight check and did not get selected for manual inspection**
 - **4. Manual Inspection**
 - **Selected by officers to be inspected**

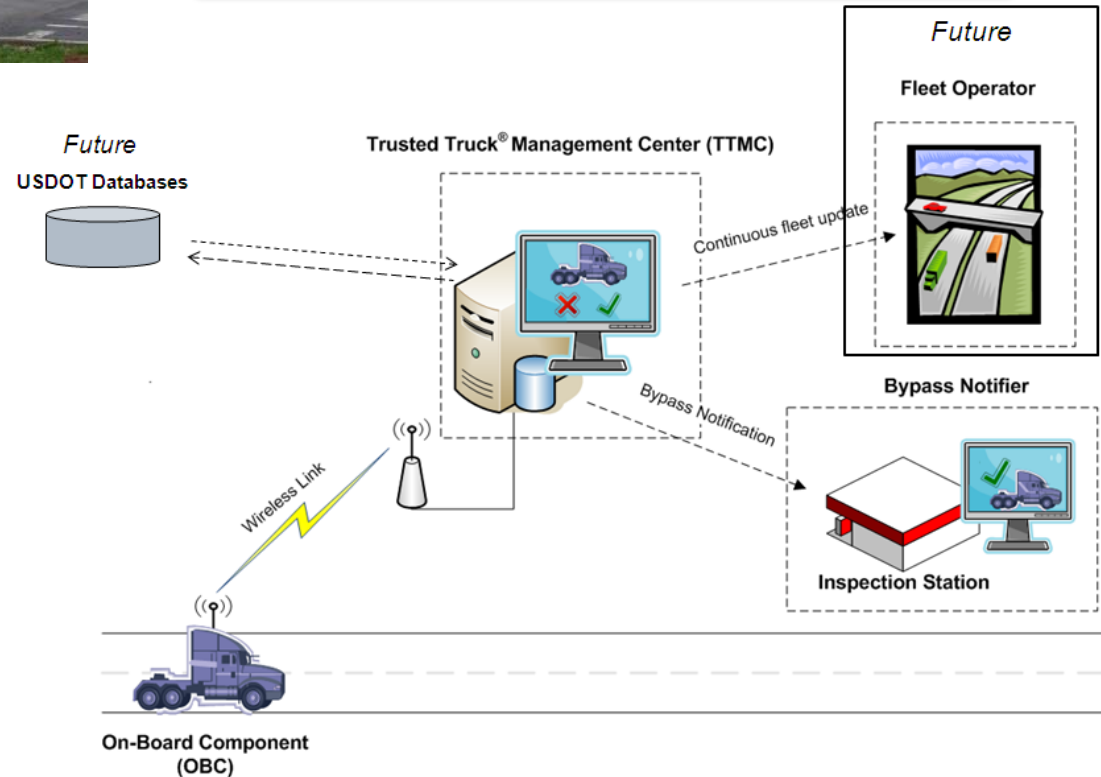


Trusted Truck®



- VIN#
- DOT#
- IFTA#
- License#
- Make & model
- Seatbelt
- Brakes
- Tire pressure & temp
- Stability system
- Lighting system
- Fire extinguisher
- Weight

- Deploy “Wireless Roadside Inspections” to increase safety without increasing congestion
- Trucks send critical data to a virtual inspection site
- Research project funded by DOT/RITA through NTRCI



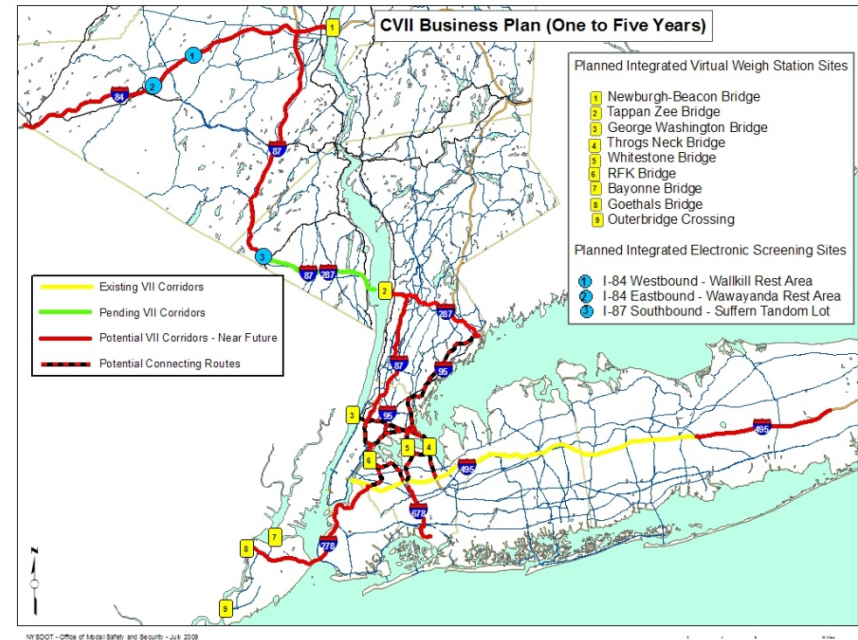


New York State DoT: Commercial Vehicle Infrastructure Integration (CVII)

CVII – Commercial Vehicle Infrastructure Integration



- Sponsors:
 - NYS DOT & I-95 Corridor Coalition
- Objective:
 - Develop and Test CV VII compliant OBE system including HMI for communication of transportation related information
 - Communication tested by 5.9 GHz DSRC with SAE J1708 CV Databus
- Test sites:
 - Greensboro, NC
 - Long Island Expressway & Spring Valley Corridor, NY



CVII Services – V2I



Wireless Driver Identification and Verification

- Driver inputs identification information; it's sent to a roadside application
- Roadside application sends a message to the driver indicating that his/her CDL is inactive, revoked, or suspended
- Driver is unable to start the commercial vehicle, if the driver's CDL is inactive, revoked, or suspended



CVII Services – I2V



Roadside to Vehicle; Generic Communications

- Back-end application sends network-based static roadside signage information to the vehicle
- Back-end application sends network-based dynamic travel information to the vehicle
- Roadside application sends localized time sensitive dynamic travel information (workzones, OS/OW temporary restrictions, geofencing warnings, etc) to the vehicle

Infrastructure



CVII Services – V2I



Vehicle to Roadside Generic Communications

- Vehicle sends standard anonymous probe data (i.e. current SAE J2735 probe message) to a back-end application
- Vehicle sends truck related anonymous probe data to a back-end application
- Back end application displays probe data on a GIS map

Infrastructure



CVII Services – V2V



Maintenance Vehicle to Commercial Vehicle Communications

- A moving maintenance vehicle broadcasts a heartbeat-like message with its vehicle type, position and heading
- A truck following the snow plow receives and displays a warning to the driver about the snow plow ahead

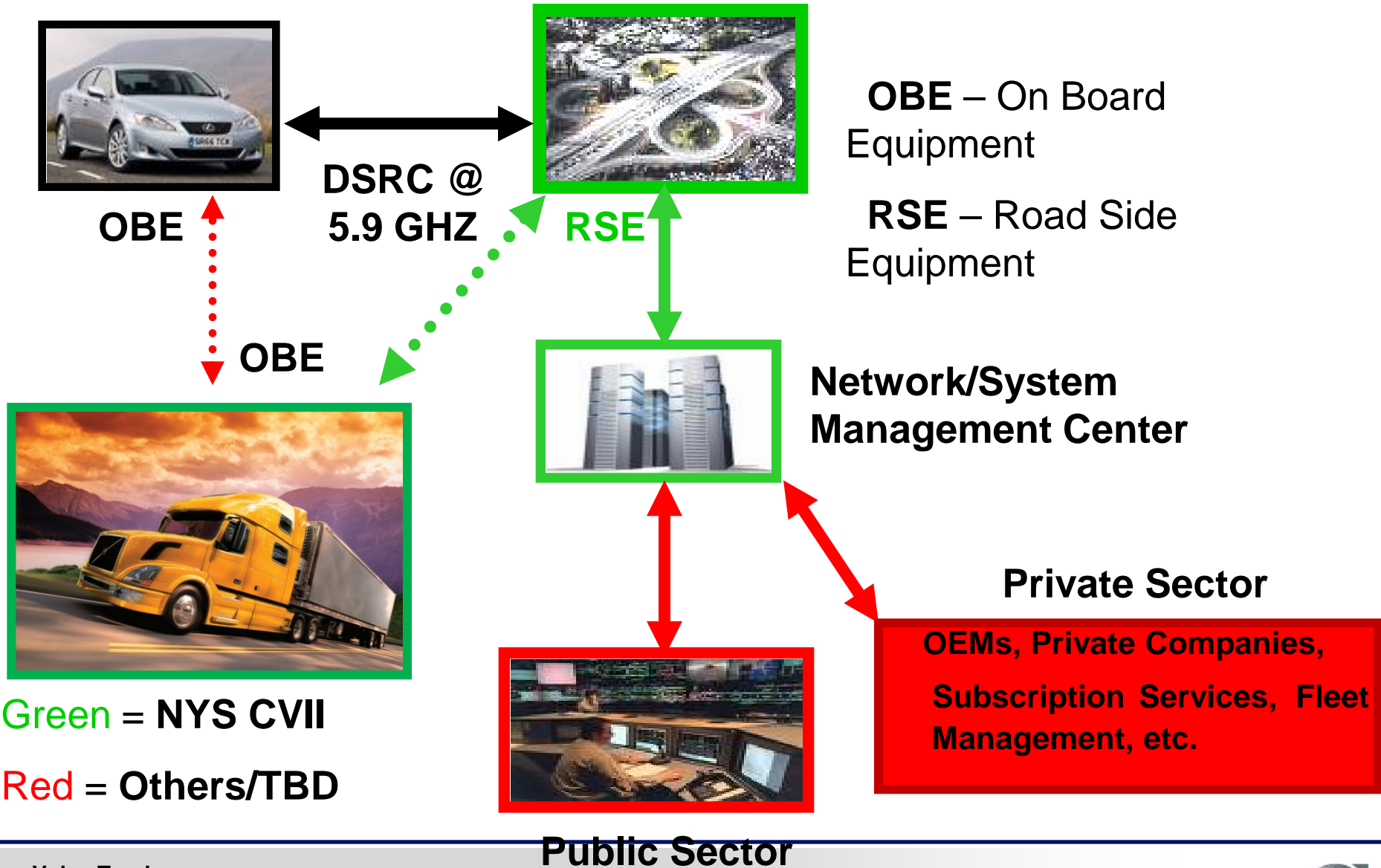




CVII Future

- Future Actions (near term)
 - Heavy vehicle to light vehicle communication
 - Priority safety applications
- Future Actions (longer term)
 - Partner with Large Carriers for long term field tests/pilot program
 - Additional RSE deployments
 - Additional applications: truck parking, overturn warning, tolling, restricted routing/geo fencing
 - Additional communication pathways (non-DSRC)

Concept of Connected Vehicles



Other initiatives in Europe



CAR 2 CAR
COMMUNICATION CONSORTIUM

In summary...

- ITS important for us as a business and as citizens across the globe
- Volvo is actively engaged in research with Commercial Vehicles
 - I-95 Corridor Coalition, NY DOT
 - U of Tenn, NTRCI
 - Europe
- More “bang for the buck” in environment safety and security with Commercial vehicles vs. passenger cars

Con-way®
FREIGHT



Integrated Truck Technology

||| August 25, 2011



At Con-way, our uncompromising commitment to Safety is fundamental to everything we do.



Con-way SAFETY PRINCIPLES

[1]

We expect everyone to return home safely.

[2]

We are personally accountable for our safety and the safety of others.

[3]

We have the courage to intervene and change behavior to ensure a safe work environment.

[4]

We believe all incidents are preventable. We will measure, learn and share information from incidents and near misses to continuously improve.

[5]

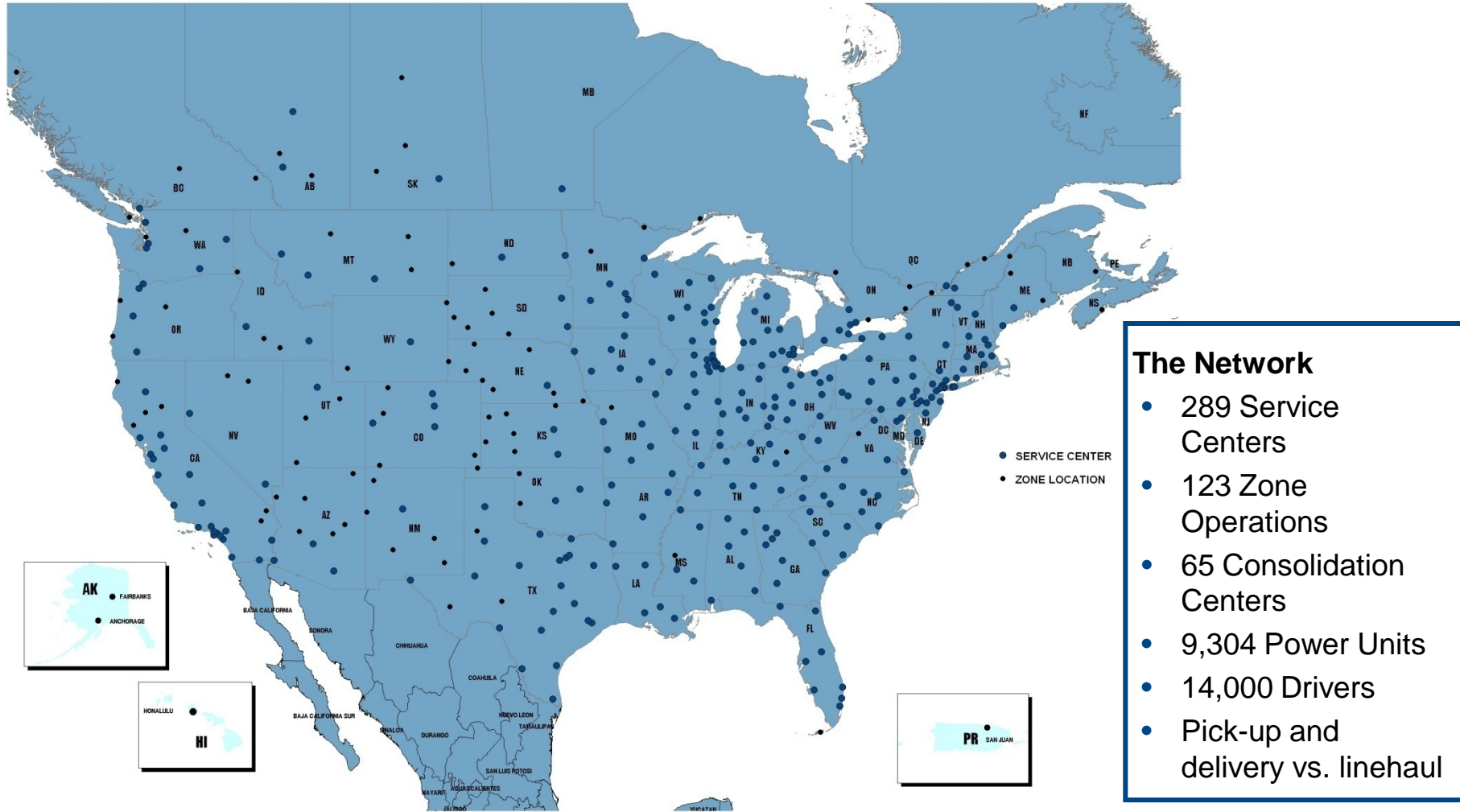
We accept safe behavior as a non-negotiable condition of employment.

Con-way

★ SAFETY. ALWAYS.



Con-way Freight is an LTL carrier focused on a world-class safety journey



Integrated Truck Technologies – What We've Done...

Integrated Vehicle Based Safety Systems (IVBSS)

- Partnership with University of Michigan Transportation Research Institute, funded by Research and Innovative Technology Administration (RITA)
- Installed various safety technologies and cameras on trucks
- Technology fed behavioral data to central database

Integrated Truck Technologies – What We've Done...

Installed permanent safety technology on 1600 units

- Front collision warning, lane departure warning, roll stability
- \$5.4 million investment
- Not currently connected to our systems



Integrated Truck Technologies – Where We're Going...

Electronic On-Board Computer (EOBR) approach

EOBR records data...we connect with the vehicle

Capable of recording hours of service, fuel usage, speed, maintenance-related information, etc.

Driving behavior is monitored

Behavior-based safety approach

Post crash investigation

Accountability, Rewards and developmental training

By connecting to an EOBR equipped unit, we access everything in the vehicle

Integrated Truck Technologies – Where We're Going...

- *Real-time* behavior tracking
 - Connectivity between trucks and overall system
 - Safety technology detects the “world around the truck”
 - World class safety culture requires immediate intervention for unsafe behavior
 - Better targeting of unsafe drivers and behaviors
 - Identification of trends



Connected Vehicle will produce the next generation of onboard safety technologies

- Vehicles will communicate with each other (V2V)
 - Traditional systems are one-way communication to the driver
 - V2V is two-way communication to everyone around the driver
- Eliminates false warnings produced by traditional radar-based technologies

Integrated Truck Technologies – Operational Approach...

Technology provides tools for decision support

- Allows us to connect our resources
- Trucks, handhelds, drivers, service centers, etc.

Connectivity leads to network optimization

- Lower costs
- Improved customer service
- Efficiency
- *Greener* operation

The better we are at connecting our vehicles with the world around them, the better service we provide

Con-way[®]
FREIGHT

Never Settle for Less.

TIMTC Webinar

August 25, 2011

*Update on the USDOT Smart
Roadside Initiative*

Tom Kearney, Freight Operations Program,
Federal Highway Administration

“Smart Roadside” – The Concept

Smart Roadside will be deployed at strategic points along commercial vehicle routes to improve safety, mobility and efficiency of truck movement and operations on the roadway.

“Smart Roadside” – Purpose and Need

- Too many legally loaded commercial motor vehicles are queued up at inspection stations;
- Unnecessary delay in the US Supply Chain results;
- Truck Travel Demand is increasing;
- Enforcement Resources are strained;
- More effective decision making by enforcement officials as to what vehicles require more extensive inspections and compliance checks would significantly reduce this delay.

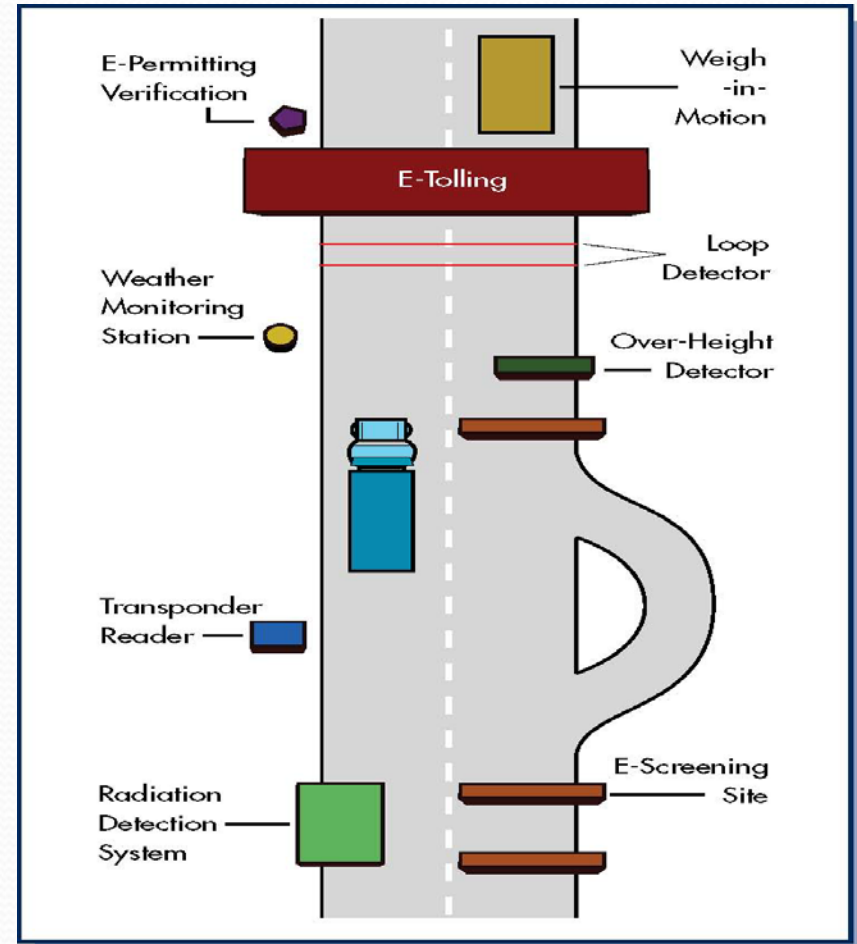
“Smart Roadside” – Objectives

The Smart Roadside Program allows trucks and drivers to be screened using wireless communication between the vehicle and the infrastructure while traveling at highway speeds.

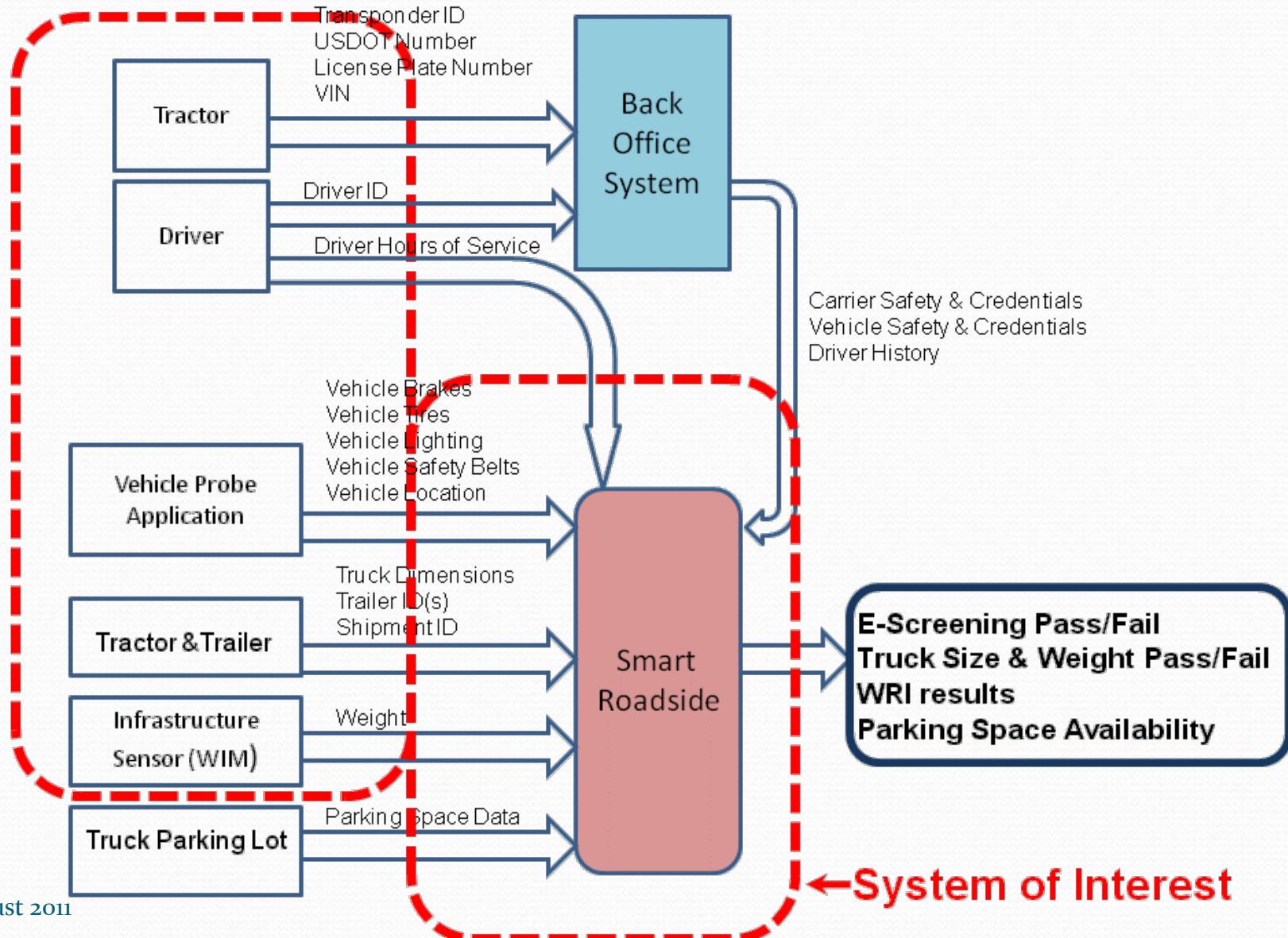
Regulatory functions can be employed while not interrupting commercial vehicle operations.

Safety is improved by eliminating stop and go traffic.

Data can provide fleet managers insights into the “real-time” status of their vehicles and cargo.



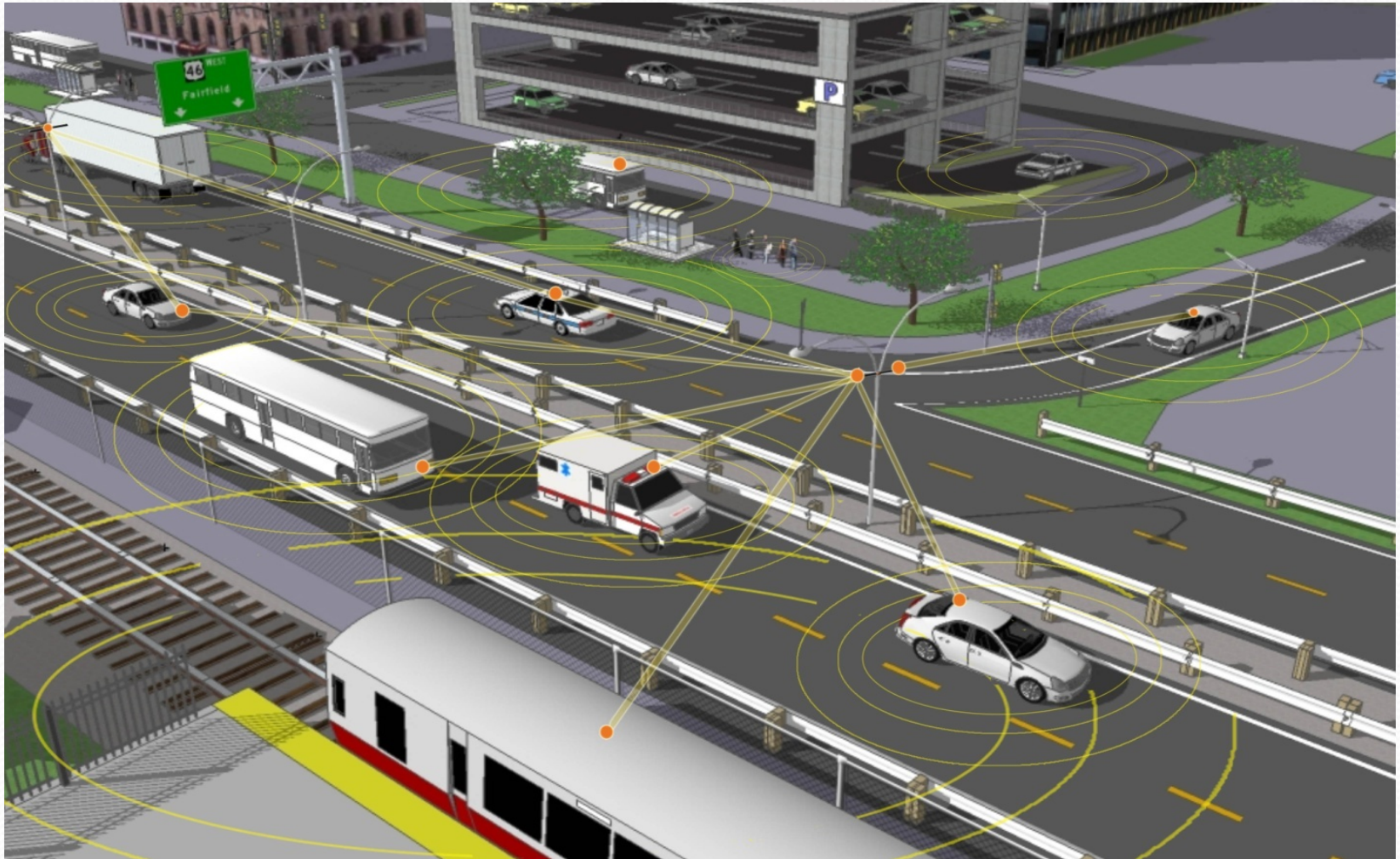
“Smart Roadside” – Initial Focus



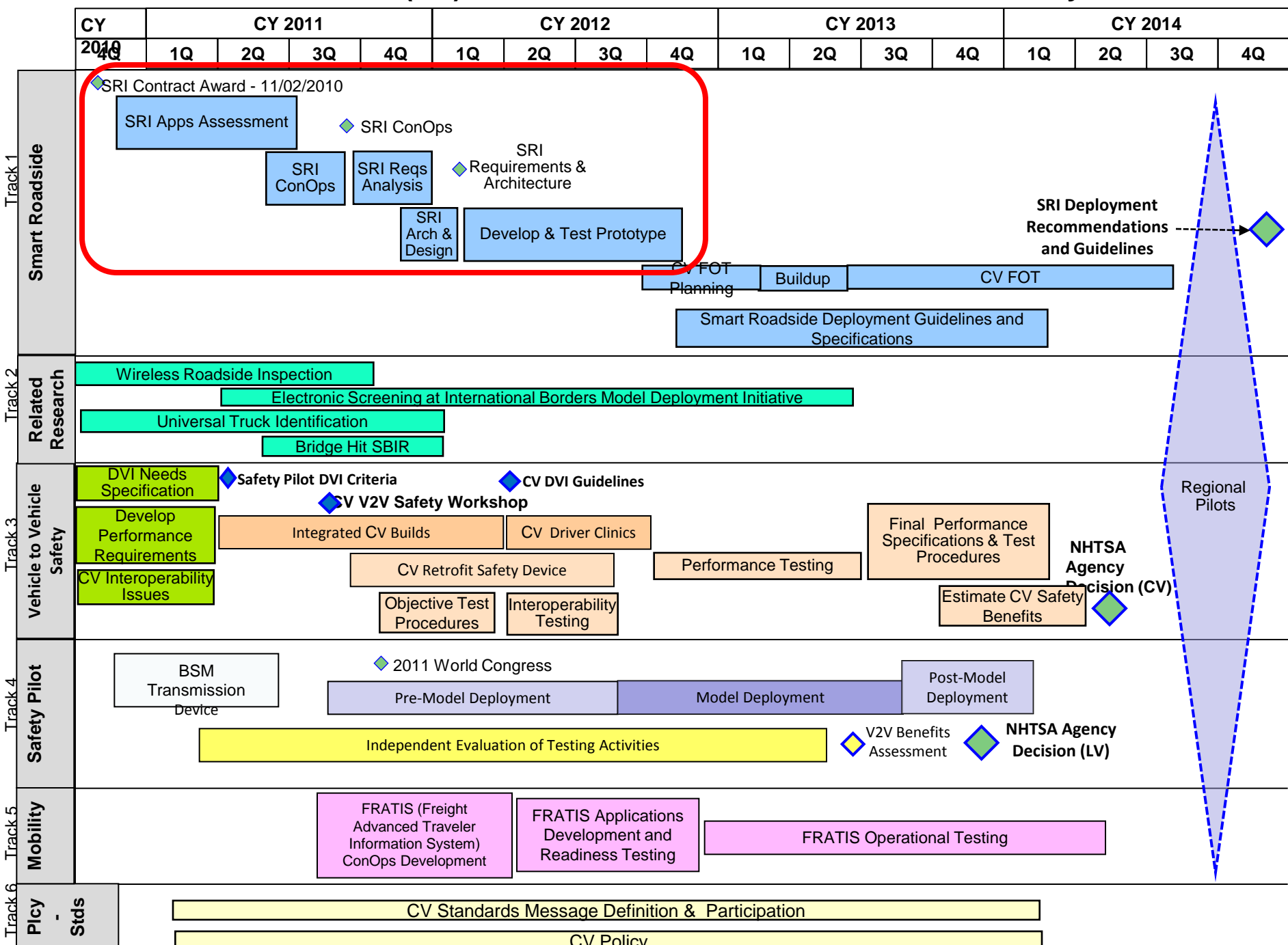
“Smart Roadside” – Current Status

- “Smart Roadside” is identified as a “priority application” in the “ITS Strategic Research Plan: 2010-2014”;
- A multi-year project is supported through the ITS Strategic Plan that will support development of a prototype application;
- “Smart Roadside” is an component of the Vehicle-to-Infrastructure” (V-I) element of the “Connected Vehicle” Research Initiative.

The Connected Vehicle Initiative



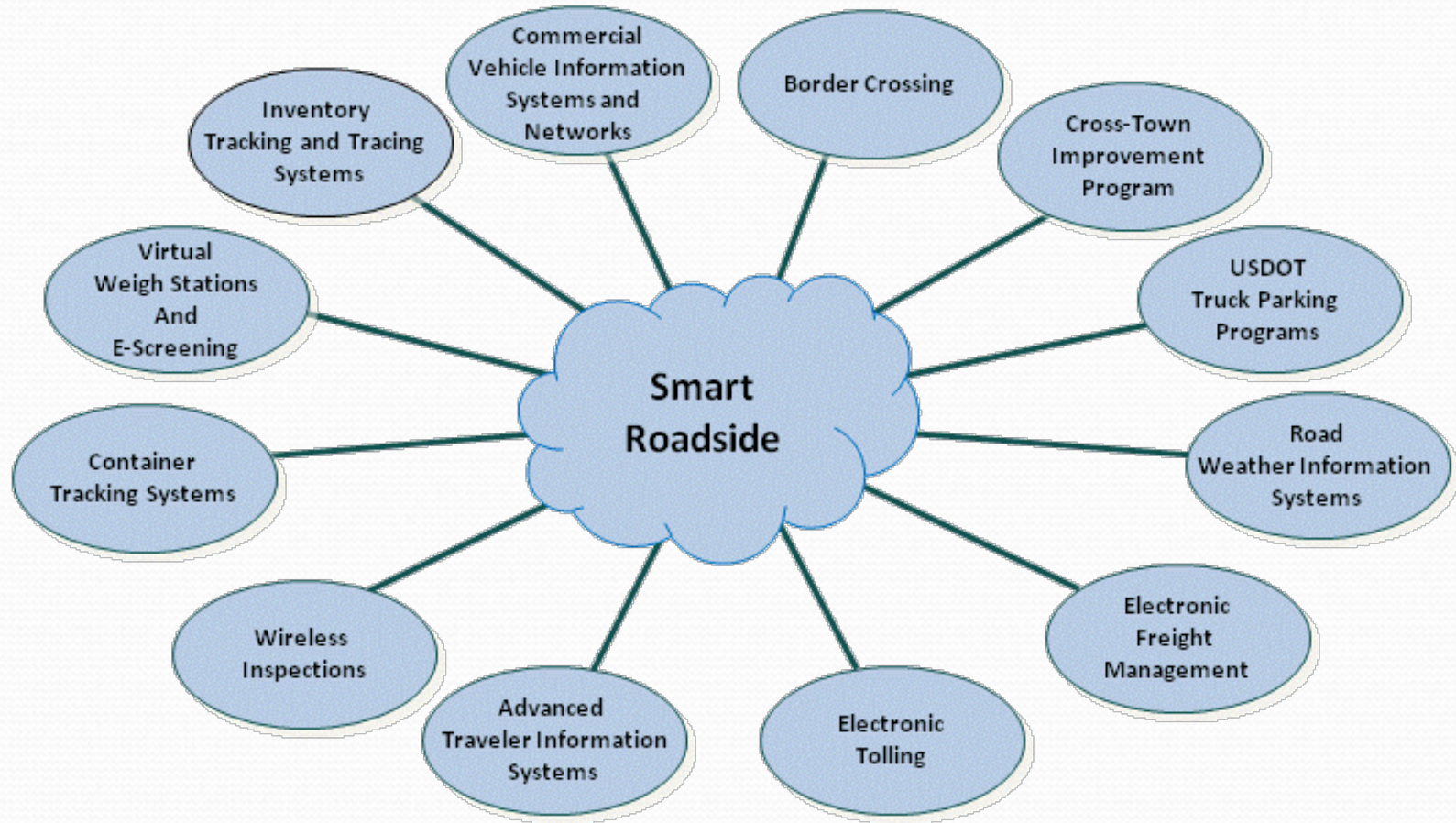
USDOT Commercial Vehicle (CV) ITS Research Plan for Wireless Connectivity – Final 7-27-11



“Smart Roadside” – Current Project Schedule

Activity	Completion Date
Project and Systems Engineering Management	Ongoing
Stakeholder Outreach	Ongoing
Applications Assessment of Deployed Systems	March 2011
Applications Assessment of Research Projects	March 2011
SRI Concept of Operations	October 2011
SRI System Requirements	November 2011
SRI System Architecture	December 2011
SRI Component-Level Design	February 2012
SRI Development and Testing	May 2012
SRI Build and Install	August 2012
SRI Prototype Testing	September 2012
SRI Final Documentation	October 2012

“Smart Roadside” – Future Implementation



“Smart Roadside” – Contact Information

Chris Flanigan

FMCSA

202-385-2384

chris.flanigan@dot.gov

Tom Kearney

FHWA

518-431-4125 ext. 218

tom.kearney@dot.gov



Questions?

Email TIMTC at timtc@trucking.org