



*UNITED STATES*  
**DEPARTMENT OF TRANSPORTATION**

# **Connected Vehicle Program**

**Moving Towards Implementation of Wireless Connectivity  
in Surface Transportation**

Dale Thompson  
RWM Stakeholder Meeting  
September 2011  
Albuquerque, NM

# ITS Strategic Research Plan 2010-2014

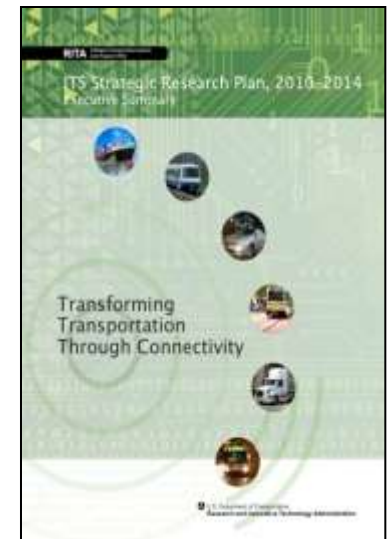
## A Truly Multimodal and Connected Effort

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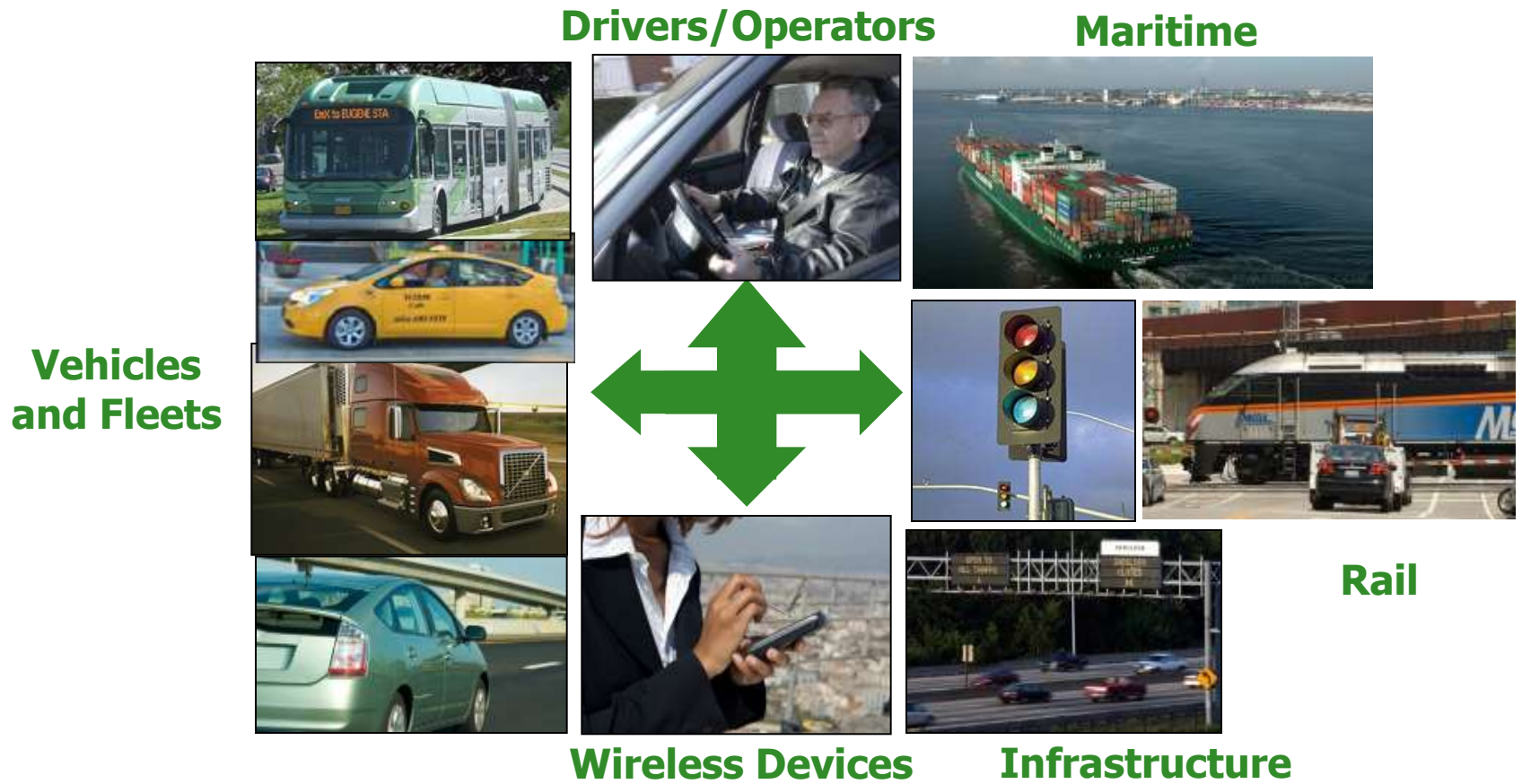
### Vision

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 multi-modal stakeholders.

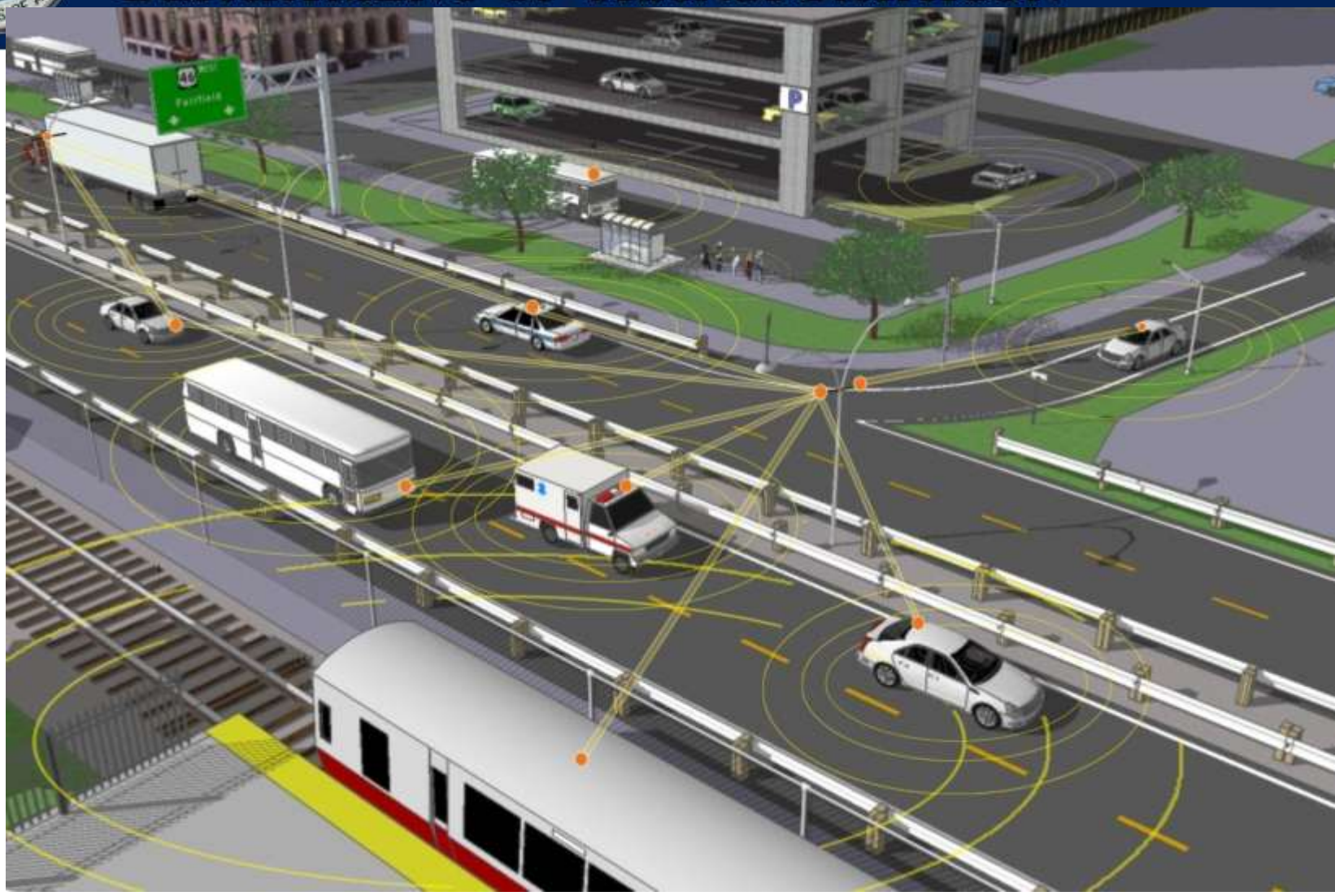


# ITS Research = Multimodal and Connected

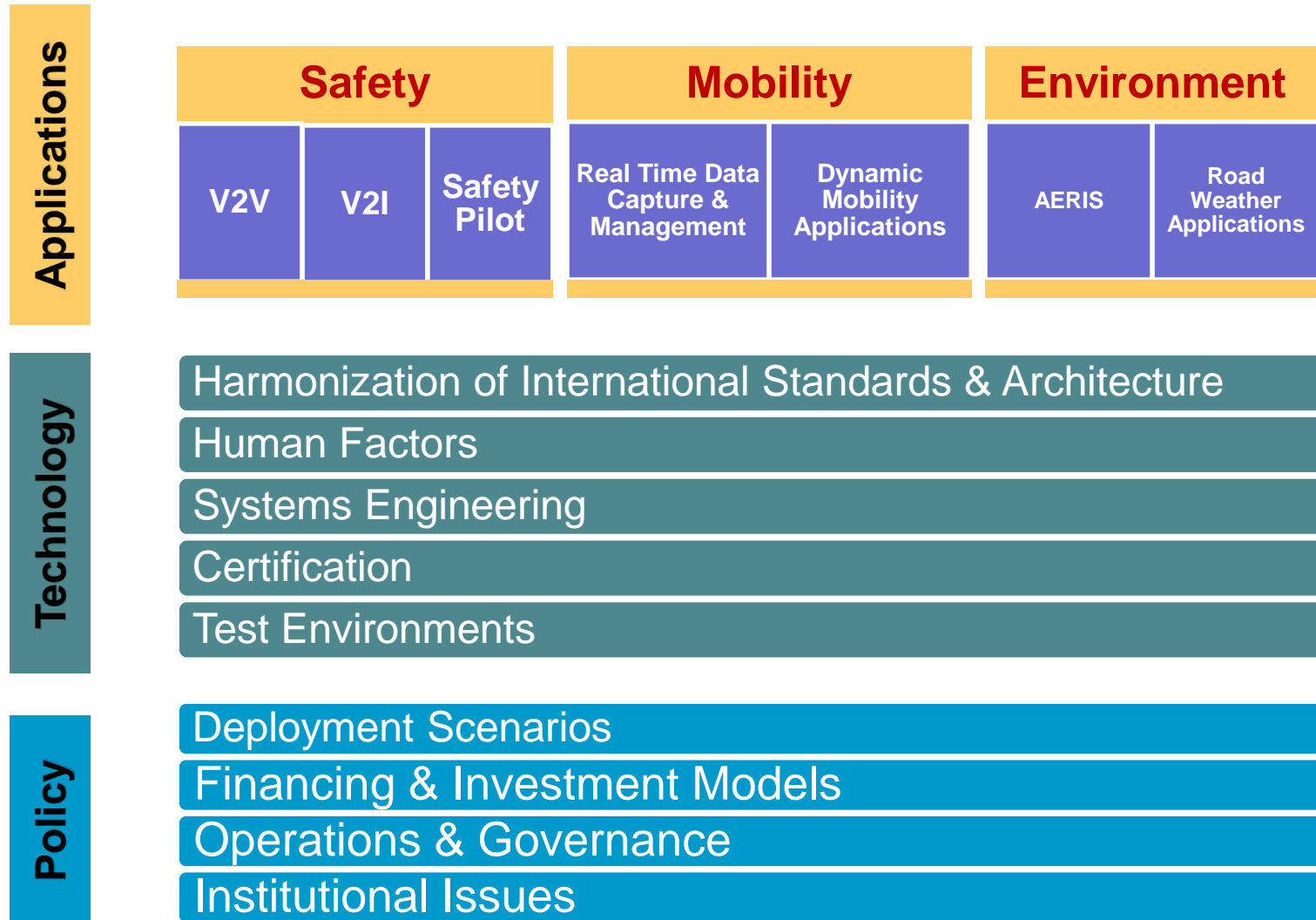




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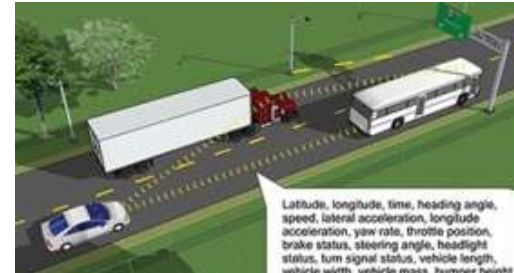


# ITS Research Program Components



# Progress – Accelerate V to V Safety

- Accelerate Benefits
  - Basic Safety Message Broadcast Devices (Here I am) – Working with 6 vendors (Autotalks, Cohda Wireless, Denso, DGE, ITRI, Savari Networks) (Need a new name for “Here I Am”, any thoughts?)
  - ASD – selected 4 suppliers
  - RSE – selected 4 suppliers
- Working on Technical / Policy Tradeoffs for Security
- Working on DVI Guidelines



# Progress - Demonstrate Safety

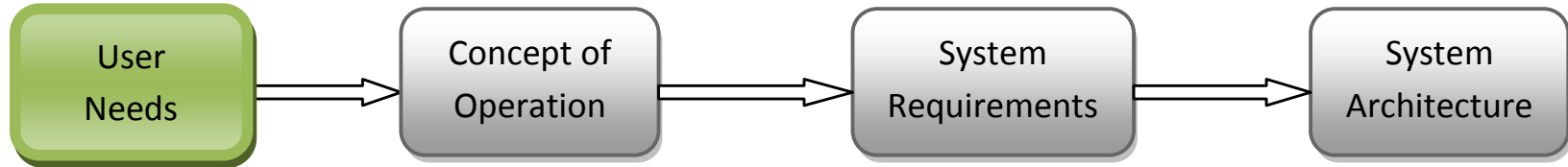
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## Safety Pilot

- Test Conductor – UMTRI (Ann Arbor, MI)
  - Schedule 6 Driver Clinics
1. Aug'11 - Michigan International Speedway (MIS) - Brooklyn, MI
  2. Sep'11 - Minneapolis, MN (MnRoad)
  3. Oct'11 - Orlando FL - Richard Petty Driving Experience
  4. Nov' 11 - Smart Road VTTI – Blacksburg, VA for DAC and Washington DC for the demo (RFK or FedEx field)
  5. Dec'11 – Dallas, TX – Texas Motor Speedway (Fort Worth)
  6. Jan'11 – San Francisco - Alameda Naval Air Station



# Progress - Define the System and Establish a Testing Environment

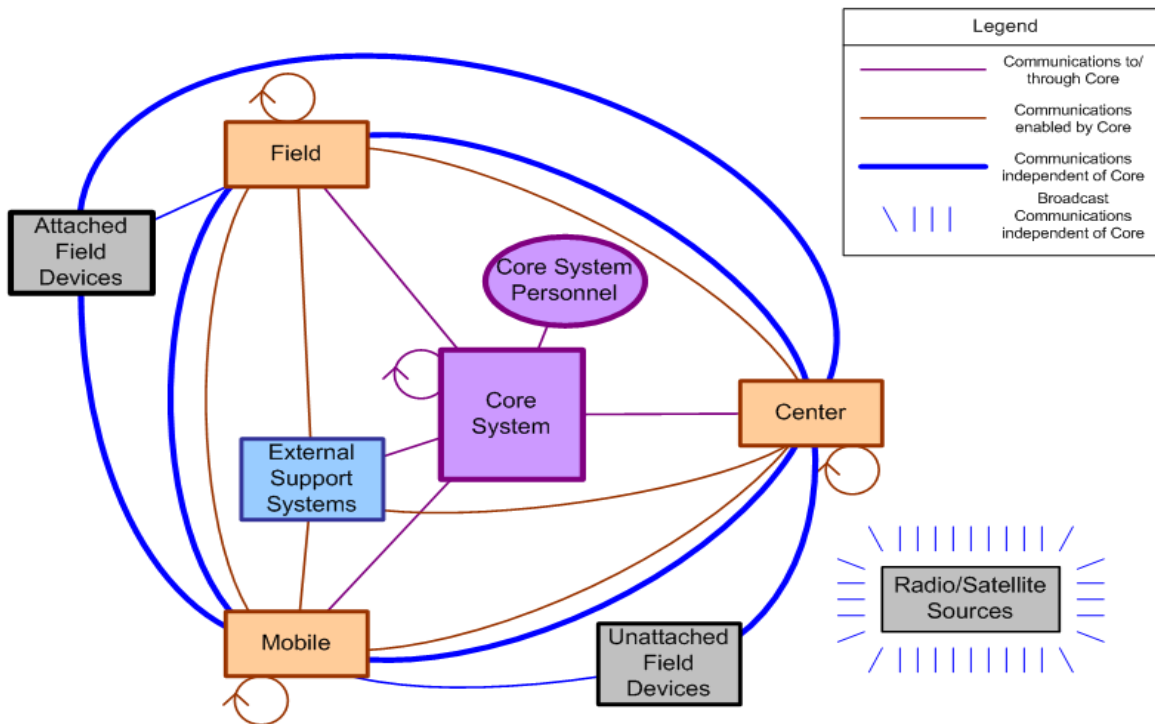


Aug./Sept. 2010

May 2011

September 2011

Oct 2011



connected vehicle environment

Open Workshops  
June 2011 (DC)  
Sep (San Jose, CA)





# Connected Vehicles & Road Weather

## Real-time Data Capture and Management

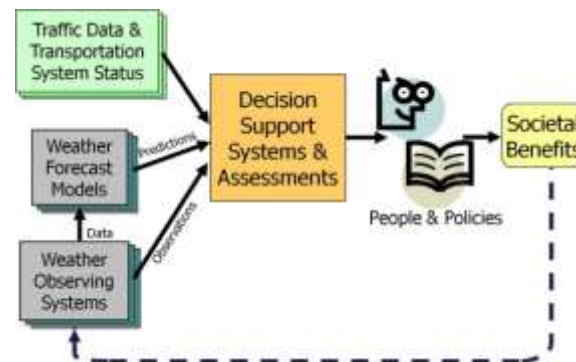


## Dynamic Mobility Applications



# Connected Vehicles & Weather – Vision

- Obtain a thorough picture of current weather and road conditions by including mobile sources
  - Higher resolution observations that spatially augment fixed sensors
  - Take advantage of existing standards and on-board sensors
- Improve weather-related decision support tools to mitigate safety and mobility impacts of weather
  - Based on ability to better detect and forecast road weather and pavement conditions



# Connected Vehicles & Road Weather

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- Identify and explore a range of mobile platforms as a source of robust data
- Develop algorithms and processing capabilities to translate the mobile data into useable weather and road condition observations
  - Is the probe data of sufficient quality?
  - What are the minimum # of samples and minimum sampling period per road segment to get valid obs?
  - What QC algorithms are needed?
  - What are the best ways to package/disseminate the obs?
- Incorporate these observations into effective mgmt. systems and decision support tools (e.g., MDSS, weather-responsive traffic management strategies)
  - What is gained by utilizing mobile observations?
  - What are the resultant data and communications requirements?



# Work Completed to Date

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- Noblis conducted two analyses along the Dulles Toll Road (2006)
  - Exploratory look at mobile observing
- National Center for Atmospheric Research (NCAR) was tasked to develop the Vehicle Data Translator (VDT)
  - Feasibility study (2007)
  - VDT Ver1.0 completed in July, 2009
  - VDT Ver2.0 completed in July, 2010
  - VDT Ver3.0 development underway
- Development Test Environment in Detroit
  - Source of most of the probe data for the VDT development
  - New work will use data from State DOTs, NCAR



# For More Information

[www.ITS.DOT.GOV](http://www.ITS.DOT.GOV)

The screenshot shows the RITA website homepage. At the top is the RITA logo and the text "U.S. Department of Transportation Research and Innovative Technology Administration". A search bar is on the right. Below the header is a navigation menu with items: About, Research, Tech Transfer, Library, Press Room, Communities, and Contact Us. A main banner features the text "Intelligent Transportation Systems Joint Program Office" and a background image of a highway with traffic. Below the banner is a "Print" button and a "Updated May 10, 2011 11:44 AM" timestamp. The main content area is divided into several sections: 1. A large image with the text "Imagine that . . . transit and truck drivers receive regular updates, allowing them to stay on schedule -- and stay in business." 2. A "Message to Stakeholders from RITA Administrator Peter Appel" section. 3. An "Our Current Research" section with sub-sections for Applications, Mode Specific, and Cross-Cutting, listing topics like Vehicle-to-Vehicle Safety and Real-Time Data Capture. 4. A "Procurement Opportunities" section. 5. A "Public Meetings" section. 6. An "ITS Video Challenge" section. 7. A "Stay Connected" section with social media icons for Facebook, Twitter, Email, and RSS.

Dale Thompson  
Data Capture & Weather  
Program Manager  
RITA, ITS Joint  
Program Office (JPO)  
Dale.Thompson@dot.gov