Where Should Rural ITS Be Going?

Common trends

- Performance management
- Connectivity
A Performance Revolution is Coming!

- Multi-modal solutions
- Focus on moving people not cars
- Integrated network performance
- Allocating transportation via price signals
Wireless Technology

- Wireless technology boom
- Strong consumer market
- Fast pace of innovation
- Expectation for information
- Ubiquitous connectivity
- Person-to-person networking
Growing Wireless Connectivity

Source: Telematics Research Group, Inc.
Consumers Expect Traffic & Weather

Traffic is the #1 content feature requested by consumers for navigation systems.

Q: How important are each of the following features in an installed or portable GPS vehicle navigation system or in a cell phone based navigation service?

- Traffic Conditions Along Route: 62%
- Weather Conditions: 81%
- Local Gas Station Prices: 42%
- Many POIs: 30%
- Display of Available Parking: 11%
- Detailed POIs: 9%

### Automotive Adoption of Real-Time Traffic

#### Number of OEM Models with available factory-installed XM NavTraffic

<table>
<thead>
<tr>
<th>OEM</th>
<th>Traffic Intro</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honda/Acura</td>
<td>MY 2005</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>GM/Cadillac</td>
<td>MY 2005</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Toyota/Lexus</td>
<td>MY 2007</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nissan/Infiniti</td>
<td>MY 2007</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ferrari</td>
<td>MY 2008</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
<td><strong>9</strong></td>
<td><strong>19</strong></td>
<td><strong>40+</strong></td>
<td><strong>50+</strong></td>
</tr>
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</table>

#### OEM NavTraffic Annual Production

- **2004**: 0
- **2005**: 50,000
- **2006**: 100,000
- **2007**: 150,000
- **2008**: 200,000
- **2009**: 250,000

Source: Vehicle Traffic Information Coalition
Trends

A Data Revolution is Coming!
Where Should Rural ITS Be Going?

Unique issues

- Limited connectivity
- Broadband
- Safety
- Freight
- Weather
- Work zones
Rural Issues

Connectivity

• Potential is there
• Coverage not pervasive
• Gaps are likely

• And, it’s more information than we have today
Public Agencies Are Looking at Opportunities

- State DOTs are purchasing real-time data from private providers.
Rural Issues

Safety

- Potential is there
- Coverage not pervasive
- Gaps are likely

Opportunities

- Vehicle to vehicle
- Vehicle to infrastructure
- Infrastructure based

- Rural Safety Program
Rural Issues

Weather

Opportunities

- Vehicle to vehicle
- Vehicle to infrastructure
- Infrastructure based
- Clarus
- MDSS
Rural Issues

Work Zones

Opportunities

- More work zones – ARRA
- ITS applications
- ITE web seminar

Which work zone will I get?
Construction starting on improvements to the Route 114 (Racebrook Road) and Route 34 (Derby Turnpike) intersection in the Town of Orange.

The Connecticut Department of Transportation announces that work for the intersection improvements at Route 114 and Route 34 in Orange have begun.

More Information
The ITS Program: Past, Present and Future

The Universe of ITS

Traditional ITS Technologies
- Ramp Metering
- Transit Information
- CV Electronic Credentialing
- Transportation Management Centers

Major ITS Initiatives
- ICM
- IVBSS
- VII - POC
- MSAA
- NG911
- NG9·1·1

Deployment

Demonstration/Deployment

Research
Vision for 2009 ITS Strategic Plan
A national, multimodal surface transportation system that features a connected transportation environment among vehicles, the infrastructure, and portable devices to serve the public good by leveraging technology to maximize safety, mobility, and environmental performance.

Mission
We improve the Nation’s surface transportation system by identifying and supporting transportation technology research & development opportunities, and by providing policies and institutional foundations to identify and promote new transportation technologies and trends.

Strategic Initiatives

Safety
- Goal: Transformative safety through vehicle and infrastructure connectivity
- Objectives:
  - Enable active and passive safety applications (i.e., applications designed to assist vehicle operators in avoiding imminent crashes and which require low latency communications).
  - Improve safety by providing in-vehicle advisories which do not require low latency communications.
  - Perform testing necessary to support regulatory and advisory activities, evaluations of system performance effectiveness, and the development and validation of standards.
  - Provide a foundation for technologies to enable partial or full vehicle control.
  - Enable vehicle-based applications such that they achieve program objectives without negatively impacting driver focus.
  - Harmonize standards and architecture internationally around the vehicle platform.
- Performance Measures
- Action Plans

Mobility
- Goal: Capture complete, real-time information on all roads and all modes to support transformational system performance.
- Objectives:
  - Capture real-time data from connected vehicles, mobile devices, and infrastructure.
  - Capture real-time system cost information across all modes.
  - Develop a technology framework that enables the integration of real-time data from all sources for use in transportation management and performance measurement.
- Performance Measures
- Action Plans

Environment
- Goal: Enable environmental management through vehicle and infrastructure connectivity.
- Objectives:
  - Create interoperability of electronic payment systems across modes (parking, transit, pricing, tolls, etc.)
  - Define technology framework to support emerging state and national policy for transportation financing.
  - Create applications that use real-time data on environmental impact for use by transportation managers.
  - Create information from real-time data on environmental impact for use in traveler information.
- Performance Measures
- Action Plans

Policy Foundation for Deployment
- Goal: Establish an institutional foundation for deployment of safety, mobility, and environmental applications based on vehicle and infrastructure connectivity.
- Objectives:
  - Identify and research solutions to address institutional foundations, governance, privacy issues, potential regulations, and policies, both nationally and internationally, to implement transportation technologies.
  - Address social equity in all goal areas to ensure that all users benefit from transportation solutions.
- Performance Measures
- Action Plans

Core Values
- SWOT
- Value Proposition
- Core Values
“Connectivity” is manifested in IntelliDrive℠

IntelliDrive℠ Connectivity for:

Safety
- Vehicle-to-Infrastructure
- Vehicle-to-Vehicle
- Vehicle-to-other Devices

Mobility, productivity & convenience

VII
- V2I & V2V
- Safety/Mobility Apps
- DSRC
“Connectivity” is manifested in IntelliDrive℠

• IntelliDrive℠ is a suite of technologies and applications that use wireless communications to provide connectivity:
  – With and between vehicles
  – Between vehicles and roadway infrastructure
  – Between vehicles, infrastructure and wireless consumer devices

• IntelliDrive℠ embodies connectivity
http://www.intellidriveusa.org/
ITS JPO Strategic Plan Goals and Objectives

**Vision for 2009 ITS Strategic Plan**
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### Strategic Initiatives

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**OBJECTIVES**
- Enable active and applications (i.e., designed to assist operators in avoiding crashes and reduce latency communications.)
- Improve safety by vehicle advisories requiring low latency communications.
- Perform testing in support automated vehicles, evaluate performance efficacy, and develop standards.
- Provide a foundational technologies to enable vehicle control.
- Enable vehicle-to-vehicle and vehicle-to-infrastructure communications.
- Harmonize standards and policies for the vehicle platform.

**Performance Measures**
- Action Plans

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**IntelliDrive**
Safer. Smarter. Greener.
Parameters for Future Research

- Consistent with US DOT Goals, ITS Program Vision
- Few, focused, high value, bold
- Potential for significant impact at a national scale
- Generally address research or deployment issues that support multi-modal vision
- Address a clear research question that would not otherwise be filled due to:
  - Too big or too risky for any one entity alone
  - Too many players and no clear ownership
- Expected to offer a positive, measurable return on investment
- Offer a justifiable or clear Federal role
- Appear to be implementable, technically feasible, and have a clear champion, with supportive partners
- Will be a market catalyst
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- Vehicles
- Infrastructure
- Wireless Devices

Deployment

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