Operations and Travel Information Integration Sharing (OTIIS) Project
North/West Passage Pooled Fund

Steve Albert
Director, WTI

NRITS Conference
August 27, 2013
Overview

• Introduction
• Literature Review
• Influencing Driver Behavior
• Steering Committee Survey
• Preliminary System Mockups
• Next Steps
The North/West Passage

Overview

• Introduction
• Literature Review
• Influencing Driver Behavior
• Steering Committee Survey
• Preliminary System Mockups
• Next Steps
Literature Review

• Trends in Current Traveler Info and Technology
  – 26 Reports, Journal Articles and Conference Proceedings

• 511 Coalition Findings

• Existing Private Sector Systems

• The Future: Connected Vehicles
Current Traveler Info & Technology Trends

- **Personalized** information preferred
- **Push type notifications** gaining in popularity
- **Mobile devices** favored
- **Social media tools** are increasingly used for information dissemination
- **Public-private partnerships** are an important component of ATIS
- **Effective marketing campaigns** should be utilized
- Identify **tourism anchor destinations**, such as National Parks, and prioritize information and advertising toward these resources
511 Coalition Findings

- Corridor-wide traveler information that extends beyond an individual state is desired
- Consider accessibility issues for all users, particularly older drivers, in design of ATIS interfaces
Existing Private Sector Systems

- 3 main types: Traffic, DOT Recreation, Trucker Specific
Existing Private Sector Systems

- **Trucker Specific**: (My DAT Trucker Services App)
The Future: Connected Vehicles

• Connected vehicle systems may provide great benefits in terms of safety, mobility, and the environment
• AASHTO is working to develop conceptual illustrations for different connected vehicle applications

• Private Sector (CISCO):
  – Big Data
  – Infotainment
  – The Internet of Cars
  – Public/Private Partnership
How to Unlock the Societal Benefits of Intelligent Traffic Systems + Telematics?

**ITS**
- Connects Vehicles & Roads
  - V2X security requirement
  - Smart road pricing/ VMT
  - Better traffic management
  - Better road management
    - Less crashes
    - Less congestion
    - Less fuel and pollution
    - Compensate fuel tax erosion

**Telematics**
- Connects Vehicles
  - Connected safety & security
  - Connected vehicle care
  - B2B/G service platform/ PAYD
  - Dynamic navigation/ LBS
  - Infotainment/ productivity
    - Better Crash “Safety”
    - Better user experience
    - Higher profitability

Source: Cisco IBSG Automotive, 2011
Overview

• Introduction
• Literature Review
• Influencing Driver Behavior
• Steering Committee Survey
• Preliminary System Mockups
• Next Steps
Influencing Driver Behavior

System Design
User Centered

User Interface Behavior
Overview

- Introduction
- Literature Review
- Influencing Driver Behavior
- Steering Committee Survey
- Preliminary System Mockups
- Next Steps
Survey of Steering Committee Members

- Rank the importance of various aspects of traveler info
  - CVOs and Recreational Travelers (Pre-trip and En-route)
Survey of Steering Committee Members

• Rank the importance of various aspects of traveler info
  – CVOs and Recreational Travelers (Pre-trip and En-route)
Survey of Steering Committee Members

- Rank the importance of various aspects of traveler info
  - CVOs and Recreational Travelers (Pre-trip and En-route)
Survey of Steering Committee Members

- Rank the importance of various aspects of traveler info
  - CVOs and Recreational Travelers (Pre-trip and En-route)
ITS Heartland Presentation

- 1 = not at all important, 2 = somewhat important, 3 = very important

<table>
<thead>
<tr>
<th>Amenity</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sufficient restroom stalls</td>
<td>2.77</td>
</tr>
<tr>
<td>Free wireless internet access</td>
<td>2.77</td>
</tr>
<tr>
<td>Weather/road/traffic condition information</td>
<td>2.44</td>
</tr>
<tr>
<td>Gas/food/lodging information</td>
<td>2.13</td>
</tr>
<tr>
<td>Interpretive displays of local history/interests</td>
<td>2.13</td>
</tr>
<tr>
<td>Tourism event/attraction information</td>
<td>2.01</td>
</tr>
<tr>
<td>Diaper changing stations</td>
<td>1.53</td>
</tr>
</tbody>
</table>

ITS Heartland Presentation

• Zoom Information Systems:

Content is King!

Our experience has shown that people will interact with a kiosk for one of these needs:

- What’s the weather like ahead?
- What does the road/traffic look like ahead?
- Where can I eat/sleep ahead?
- What is there to do ahead?
- What travel services are available?
- What trucking services are available?
- What RV services are available?
- …and more.
ITS Heartland Presentation

- Zoom Information Systems:

What Info Do Travelers Want?  
(Based on 5 years of Data)

Rural
1. Weather
2. Tourism
3. Exit Points of Interest
4. Location-Based Ads
5. Traffic
6. All Others Negligible

Coming into Cities...
1. Weather
2. Traffic
3. Tourism
4. Location-Based Ads
5. Exit Points of Interest
6. All Others Negligible
Overview

• Introduction
• Literature Review
• Influencing Driver Behavior
• Steering Committee Survey
• Preliminary System Mockups
• Next Steps
What's Unique about this System?

- Corridor Wide (not state specific)
- Includes a mobile auditory alert system
- Utilizes an optional customizable user profile
- Includes unique trip planning information
  - Recreational interests, gas/food/lodging, long distance weather
- Route comparisons
  - Travel time, alerts, weather, recreational interests
- En-route directions and amenities locations nearby
  - Directions read aloud, find gas/food/lodging nearby, etc.
  - Revenue generation opportunities
System Mockups
“Alert: a multiple-vehicle collision is blocking the right lane approximately 20 miles ahead.”

Heavy rain likely.
Forecast: 8/2/2013 morning.
Updated: 8/1/2013

Active: 9/5/2013
Begin date: 9/5/2013
End date: 9/5/2013
Location: 20 miles E of Rapid City
Mile marker begin: 
Mile marker end: 
Impact: Low
Restrictions: Speed 60 mph
Notes: Median work, all lanes open
2  ✔  Ft. Sisseton Historic State Park

5  ✔  Mitchell Prehistoric Indian Village

4  ✔  Minute Man Missile National Historic Site
Overview

• Introduction
• Literature Review
• Influencing Driver Behavior
• Steering Committee Survey
• Preliminary System Mockups
• Next Steps
Next Steps

1. Obtain system mock-ups feedback from steering committee
2. Finalize a *Concept of Operations* with input from that feedback
3. Develop *System Requirements* document
4. Prototype the system