California – Oregon Advanced Transportation Systems

Stakeholder Outreach Workshop Summary

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for the
State of California
Department of Transportation
New Technology and Research Program

and the

State of Oregon
Department of Transportation
Traffic Management Section

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INTRODUCTION

Intelligent Transportation Systems (ITS) are developing rapidly, but the implementation of these advanced technologies in rural areas has not advanced as quickly as it has in more urbanized areas. Two potential reasons for this may include: local officials and stakeholders in rural areas may not be aware of what technological opportunities exist; and there may not be a mechanism for setting local and regional priorities for the implementation of systems that may benefit state and local officials and the traveling public.

In an effort to overcome these challenges, the California and Oregon Departments of Transportation (Caltrans and ODOT, respectively), in cooperation with the Western Transportation Institute (WTI) of Montana State University, hosted a number of workshops for organizations (stakeholders) interested in the Northern California/Southern Oregon Rural ITS Areawide Travel and Safety Improvement Project. This effort is formerly known as the focus of the California – Oregon Advanced Transportation Systems (COATS) Project. One focus of the COATS Project is to encourage regional, public and private sector cooperation between Oregon and California organizations to better facilitate the planning and implementation of advanced technology systems. The approximate area of focus is between Redding, California and Eugene, Oregon. This area will provide a test bed for research, development, demonstration and deployment of rural ITS technologies and systems to “make rural travel safe, dependable and convenient”.

This report provides documentation of those workshops. Included in this report is a brief summary of the goals and objectives of the workshops, the details of those workshops and the workshop results.
GOALS AND OBJECTIVES

Stakeholder outreach is an integral component of any transportation planning effort. For our purposes, stakeholders are defined as those having a stake in the rural COATS project. This group includes, but is not limited to, local, regional and tribal transportation planners, land use planners, transit operators, senior citizen groups, welfare-to-work providers, special mobility services providers, trucking and delivery services, electronic communications providers, park and tourist destination operators, and police and emergency service providers.

To ensure the success of the rural COATS project, participants must meet with project stakeholders in the study area to:

- Introduce the rural COATS project,
- Solicit their view of the transportation challenges in their area,
- Elicit their comments on the challenges identified in the Conditions and Performance of the Existing Transportation System Report (Technical Memo No. 1),
- Maintain their interest throughout the project,
- Solicit their views on perceived solutions, and
- Provide mechanism to achieve consensus on recommended projects included in the long-term Deployment Plan.

To accomplish these objectives, two series of workshops were included in the contracted project scope of work. Also, Caltrans and ODOT participated in numerous outreach meetings and presentations with current stakeholder groups. Promoting the outreach meeting and acting as a liaison to the appropriate local and regional stakeholder groups are primary elements of the roles and responsibilities of the Regional Team members.

While there is not a pot of gold at the end of the rural COATS project, there are numerous benefits to participants and inducements for stakeholder participation. As discussed above, the stakeholders include transportation providers and those whose livelihood or service is directly dependant on transportation. Advanced rural transportation systems can serve to mitigate transportation challenges inherent in areas with limited services, thinly distributed population, episodic traffic congestion due to events and tourism, rugged terrain, and changeable, and sometimes extreme, weather conditions.

ITS are an integral component in all the solutions applied to transportation planning problems. As part of a goal-based planning process, ITS contributes to helping regions achieve their goals. Development of the Rural COATS’ ITS Deployment Plan will provide an opportunity for transportation providers to participate in a multi-jurisdiction planning effort. The public agencies, private sector and the traveling public will all benefit if decisions can be made which will lead to mutually supportive investments. Public agencies will be able to make the best use of limited resources and, because the projects will be consistent with the national system.
architecture, projects will be eligible for federal funding. Further, since the Deployment Plan will establish a regional architecture consistent with federal and statewide architectures, the traveling public will enjoy a seamless, interoperable, coordinated, inter-jurisdictional system.

Through the workshop sessions, Caltrans, ODOT and WTI gathered information from the stakeholders that was helpful in the selection of a Rural Intelligent Transportation Systems Showcase Project. ITS applications selected for demonstration will likely be those identified in the rural COATS effort as the most viable ITS candidates for early deployment. It was in the stakeholders’ interest to participate in the outreach effort to ensure that their views and concerns are considered during the solution selection and project prioritization process.

Through these outreach workshops, it is hopeful that interest and support of the project will grow. Without the support of the local and regional decision-makers the Deployment Plan may not be implemented. Stakeholder workshops also help ensure that ITS elements are deployed in the study area with a long-term view to expansion, integration and interoperability.
WORKSHOP RESULTS

Stakeholder workshops were conducted in conjunction with regular Steering Committee meetings. Staff worked with state, local, and regional transportation planners to identify appropriate workshop attendees. Invitations to the workshops were issued by letter and followed up with phone calls to key persons to optimize workshop participation.

Workshops were held in:

Medford, Oregon - December 10, 1998;
Redding, California - February 4, 1999;
Eureka, California - February 5, 1999 and;
Bend, Oregon - March 31, 1999.

The workshop was generally consistent in each location. An example of a working agenda is provided.

Figure 1: Agenda

<table>
<thead>
<tr>
<th>Agenda</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 a.m. Welcome and Introductions</td>
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<tr>
<td>9:10 a.m. Purpose and COATS Project Overview</td>
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<td>9:30 a.m. Introduction to Advanced Rural Transportation Systems</td>
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<td>9:50 a.m. Overview of Bi-State Transportation and Safety Challenges</td>
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<tr>
<td>10:10 a.m. Overview of Traveler Needs Survey</td>
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<td>10:30 a.m. Discussion/ Questions and Answers</td>
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<td>10:45 a.m. Break</td>
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<td>11:00 a.m. Small Group Discussions on Rural Needs and Opportunities</td>
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<td>Breakout Groups</td>
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<tr>
<td>- Safety/ Emergency Assistance</td>
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<tr>
<td>- Traveler Information/ Tourism</td>
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<tr>
<td>- Public Transportation/ Mobility</td>
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<tr>
<td>12:00 a.m. Working Lunch</td>
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<tr>
<td>1:30 p.m. Discussion of Workshop Summary Reports</td>
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<tr>
<td>2:45 p.m. Adjourn</td>
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</tbody>
</table>
Participation in the workshops was diverse, and varied between each workshop (Attendance lists are included in the Appendix). For this reason, the breakout sessions varied slightly between areas, depending on the particular make-up and interests of the area’s groups. In general the five breakout groups were:

- Travel Safety and Emergency Services
- Public Transit and Fleet Operators/Maintenance
- Travel and Tourism
- Infrastructure Operations and Maintenance
- Commercial Vehicle Operations

The results of the breakout sessions and the proposed action items are discussed in the following section.

**WORKSHOP RESULTS**

This section provides the summary results of the various workshops in each location. Tables were created to summarize the feedback provided by stakeholders from the different workshops. Because the workshop’s discussion were generated primarily by brainstorming, the results from the workshops were variable. Some of the line items in the charts were created to categorize specific concepts that were generated during the workshops. When a workshop generated an idea that fell into one of the line item categories of the chart, the cell corresponding to the workshop location and the issue identified was noted with an ‘x’. Each line item was totaled into a ‘Recurring Issues’ cell. The number of times a particular issue was raised is represented by the number of x’s in the ‘Recurring Issues’ cell. In summary, the following major comments were made by stakeholders and are shown in Tables 1 and 2. Table 1 summarizes the transportation challenges that were perceived to exist throughout the corridor while Table 2 demonstrates the various opportunities that were thought to exist for the remedy of the perceived challenges throughout the corridor.

**TABLE 1: CHALLENGES**
## Challenges

<table>
<thead>
<tr>
<th>Category of Issues</th>
<th>Issues Identified</th>
<th>Workshop Location</th>
<th>Recurring Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety and Emergency Services</strong></td>
<td>Locations of emergency services</td>
<td>Medford,OR</td>
<td>x(low) xx(high)</td>
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<tr>
<td></td>
<td>Lack of alternative routes</td>
<td>Redding,CA</td>
<td>x</td>
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<td></td>
<td>Incident management</td>
<td>Eureka, CA</td>
<td>x</td>
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<td></td>
<td>Interagency coordination and data sharing</td>
<td>Bend, OR</td>
<td>x</td>
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<td></td>
<td>Routing inefficiencies</td>
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<td>xxx</td>
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<td></td>
<td>Disaster management (Hazmat, natural)</td>
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<td>xx</td>
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<td></td>
<td>Jurisdictional issues</td>
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<td>xxx</td>
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<td></td>
<td>Bikers &amp; Pedestrians</td>
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<td>xx</td>
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<td></td>
<td>Funding Money</td>
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<td>xxx</td>
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<td></td>
<td>Sub-standard geometric configuration</td>
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<td>xxx</td>
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<td></td>
<td>Driver Inattentiveness, Alertness</td>
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<td>xx</td>
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<td></td>
<td>Visibility - Fog, Weather</td>
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<td>xxx</td>
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<td></td>
<td>Visibility - Signs, Obstructions</td>
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<td>xxx</td>
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<td></td>
<td>Hazard Identification - Fixed &amp; Variable</td>
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<tr>
<td><strong>Travel and Tourism</strong></td>
<td>Road closures and traffic delays</td>
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<td>xxx</td>
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<td></td>
<td>Parking - facility, attractions</td>
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<td>xxx</td>
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<td></td>
<td>Tourist traffic jams - pull-outs</td>
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<td>xxx</td>
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<td></td>
<td>Pass through travelers</td>
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<td>x</td>
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<td>Destination activity promotion</td>
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<td>Signage - Agency issues</td>
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<td>xxx</td>
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<td></td>
<td>Lack of public education</td>
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<td>x</td>
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<td></td>
<td>Timeliness of Information</td>
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<td>xxx</td>
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<td></td>
<td>Weather and road condition information</td>
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<td></td>
<td>Information relating locations of construction zones or other events and associated detours</td>
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<td>Information targeted towards tourists within the area</td>
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<td>Lack of communication services (cell &amp; hard line)</td>
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<td><strong>O &amp; M</strong></td>
<td>Pavement maintenance</td>
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<td>Landslides, Flooding</td>
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<td><strong>CVO &amp; Transit</strong></td>
<td>Inadequate HAR</td>
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<td>Inadequate Pull-outs</td>
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<td>Commercial vehicle management</td>
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<td></td>
<td>Transponders not inter-operable</td>
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<td>Lack of transit services</td>
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<td></td>
<td>Icy bridges</td>
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<td>Inclement weather - snow</td>
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<td>xxx</td>
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<tr>
<td>Workshop Breakout Groups</td>
<td>Opportunity for ITS Application</td>
<td>Workshop Location</td>
<td>Recurring Opportunities x(low) &gt; xxxx(high)</td>
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<td>Safety and Emergency Services</td>
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<td>Pavement Riffles</td>
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<td>Signing - Warning</td>
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<td>Automated Bridge De-icing</td>
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<td>Turnouts</td>
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<td>Animal control - control vegetation, barriers</td>
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<td>Reader Boards</td>
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<td>Internet</td>
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<td>Variable Message Signs</td>
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<td>Automated Enforcement - Cameras</td>
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<td>Railroad Technologies for Fleet Management</td>
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<td>Better Use &amp; Coverage of Highway Advisory Radio</td>
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<td>Remote Weather Information Systems</td>
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<td>Full Cellular Phone Coverage</td>
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<td>Lower Speed Limits on Narrow Highways</td>
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<td>Ice Detection System</td>
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<td>Call Boxes - 1-800 Number</td>
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<td>In-Vehicle Mayday Devices</td>
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<td>Cross Jurisdictional Incident Response</td>
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<td>Travel and Tourism</td>
<td>Television, Newspaper</td>
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<td>Data Collection, Traffic Information</td>
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<td>Kiosks</td>
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<td>Multi-Use Rest Areas - Information</td>
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<td>Remote Advertising</td>
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<td>Smart Card - Tracks Tourist Behavior</td>
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<td>Regional Server for Multiple Agencies</td>
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<td>Off-Peak Rewards</td>
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<td>Bicycle Lanes Routing</td>
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<td>Automatic Maintenance</td>
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<td>Cooperation in Transportation Planning</td>
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<td>O &amp; M</td>
<td>Technology to Solve Tight Corners</td>
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<td>Rock Slide Warnings</td>
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<td>HAZMAT - On Board Mayday</td>
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<td>Interoperable Transponders</td>
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<td>In-Vehicle Control- “Smart Vehicles”</td>
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<td>Merge Warnings</td>
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<td>Dynamic Downhill Speed Signs</td>
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<td>Road Closure Broadcasts</td>
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<td>Real Time Weather Conditions</td>
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<td>Centralized Dispatch for Information</td>
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<td>Time Stamping of Information</td>
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<td>CCTV on Web Site</td>
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<td>Making Transit Attractive</td>
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<td>Data and Resource Management</td>
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CONCLUSION

Four stakeholder workshops were held throughout the Northern California and Southern Oregon corridor. These workshops were intended to familiarize the stakeholders with the potential uses of ITS applications as well as to familiarize the sponsors and Western Transportation Institute with the issues that are perceived to be problematic throughout the corridor. The stakeholders were divided into groups based on their area of interest. The groups that were formed focused on Safety and Emergency Services, Travel and Tourism, Operations and Maintenance, or Commercial Vehicle Operations. The groups were asked to list the challenges that they perceived existed in their area. Based upon these challenges, the stakeholders were asked to list the opportunities that they felt existed for remedy of the various problems. The recurring challenges and opportunities that exist throughout the corridor have been extracted from this information and are listed below.

Communication and information challenges:
- Lack of cellular coverage and hard line services
- Timeliness of information
- Weather and road condition information
- Tourist information
- Road closure information
- Signage – visibility and hazard identification

Management challenges
- Commercial vehicle management
- Interagency coordination
- Jurisdictional issues
- Maintenance of pavement

From the challenges that were identified, a set of opportunities was developed that could potentially remedy the perceived problems. Some of the commonly recognized opportunities that were identified are listed below.

Communication and information opportunities
- Education
- Web site supported by regional server
- Variable Message Signs
- Highway Advisory Radio
- Kiosks
- Road Weather Information Systems
- 1-800 telephones and call boxes
- Smart Cards for tourist behavior
- CCTV web site
- Advisory television

Management opportunities:
- On board Mayday
- Automated enforcement
- Cooperation in transportation planning
In summary, a comparison was made from information provided by the stakeholders of the technology applications. The items were ranked based on the number of times the technology applications were identified in the four workshops, as shown in Table 2. These opportunities were then modified as needed to relate to the National ITS Architecture market packages and are shown below.

The technology applications which were recognized as potentially applicable to attendees in four of the four workshops include:
- Variable message signs
- HAZMAT on-board mayday
- Road-weather information systems
- Highway advisor radio
- Kiosks
- Regional Internet server/ website
- Education

The technology applications which were recognized as potentially applicable in three of the four workshops include:
- 1-800 Travel advisory telephone
- 1-800 Reporting Telephone
- Call boxes
- In-vehicle control
- In-vehicle mayday device
- Advisory television
- Closed circuit television
- Traffic Information
- Smart cards (tourism)
- Automated enforcement
- Regional transportation planning

In closing, information from this report will be used to provide input and a reality check to meeting public need. Data collected from the workshops is one data point and will be combined with other data to finally determine the most applicable short-term and long-term needs for this project.
Appendix

WORKSHOP DETAILS

The following lists comprise the information gathered during the workshops. Each breakout group listed their perceived challenges, opportunities, and other pertinent information on a white-board. The information was then assimilated by the Western Transportation Institute. The following information was recorded directly from the white-boards.

Medford, Oregon

Travel Safety and Emergency Services

Problems
  Driver Inattentiveness
  Fog/Visibility
  Animal Collision
  Mixed Traffic/Different Speeds
  Fixed Hazards
    - trees, bridge ends
  Railroad Crossings
  Drivers ignore traffic/roadway signs
  Sign readability in all conditions
  Interagency Cooperation
  Change driver behavior
  Communication/radio deadspots
  Cross/multi-jurisdictional areas-incidents
  Emergency Vehicle routing efficiencies
  Inclusive Transportation Planning
  Service ends at county line
  Funding transit is Rural areas (cost/benefit or societal benefit)
  Insurance costs

Opportunities
  School system/educate users
  Pavement Riffles
    -Curves, intersections
    -Driver inattentiveness
  Reader boards at strategic locations
  Website/electronically controlled from TEC
  • Variable speed signs
    -Potential Demo (Grants Pass-Roseburg)
  • Automatic monitoring of compliance & ticketing
  • Radio Information
    -cross geographical area
• Cross jurisdictional
  -emergency incident response plans
• Require cooperation to receive revenues
• Legislative changes to enable deployment
• Operational plan/forum to avoid duplication of effort LOC/AOC

Institutional Issues
  Partnership
    -Logical partnerships to maintain entire system
  Information Sharing
    System wide pavement information system

Partners
  National Weather Service
  Fish & Game

Public Transit and Fleet Operators/Maintenance

Problem
  Agreements w/railroad corporations for safety issues and transit technology
  Transponder inter-operability
  Access for communication lines/shared resource
  Revenue sharing for communication service
  Coordination between small transit providers
    -inter and intra jurisdictional service

Opportunities
  Communication from users
    -timely/accurate
  Vehicle heads up display
    -roadway warning & information
  More relevant/dynamic signage
  Better visibility of signs
  Positioning-Location System
  Rural Carpool Network
  Coordinated association transportation services
    -senior citizens group, etc.
  Insurance cost pooling for transit vehicles

Institutional Issues
Partners

Travel and Tourism

Problem
- Main access road closures-up to two weeks (101, I-5)
- Timely/appropriate information
- Geographic locations
  - Sis. Pass I-5
  - Highway. 199
  - Highway 38
  - Highway 101-slide area
- Disaster management
- Eagle Point rest area
- Weather
- Parking
- Alternate routes
- Linguistic issues
- When a delay with happen at an attraction
- Signing consistency
- RV parking
- Facility parking
  - I-5 & 84
Attractions are dispersed/car oriented
BRITT festival

Opportunities
- Newspaper, Television, Internet
- Organization information reception
  - person to person
- Techs to give info
- Data collection, traffic information
- Designate an individual to keep track of information
- Internet/Kiosks
- Integrate HAR’s with Tourist/Traveler information
- Cross-state communications
- Information stops
- Incorporate other business with rest area to provide safety/info/security
- Coordinated fee collection
- Rewards for off-peak times
- Smart Card
- Bicycle Lanes-Routing

Institutional Issues
efficiency of office
liability
public resistance
desensitization of public

Partners
Forest Service
Oregon Department of Transportation
BLM
Rural Economic Development
Parks
Recreation Department
Special event organizations
Chambers of Commerce
SOVA
Redwood Empire Association
Bicycle Clubs/Outdoor clubs
State/County/Local Departments of Transportation
Tribes
Banks

Infrastructure Operations and Maintenance

Problem
Landslides
Flooding
Pavement Maintenance

Opportunities
Monitor/notification systems for Roadway conditions
   -flood/drainage
Automatic Maintenance
   -inventory
Inclusive Partnerships in transportation planning
   -cooperation
   -leverage funds
   -share knowledge

Institutional Issues

Partners
Commercial Vehicle Operations

Issues

Make transponder work
  - interoperable (Oregon & California)
  - California and Oregon systems are different
  - jurisdiction

Truck Merging

Trucker rest time

VORAD

Grades

Driver fatigue

Simple solutions

Snow

Glenndale, PM 80 on I-5 (road closed)

“Dummying-down” society

Road condition information

Automobiles during bad weather

Number of road closures (why are they increasing?)

Techno approval to drive in bad weather

Hwy 199 (Grants pass and Brookings)
  ~6 “bad” areas (provide truck alert)

Hwy 140 (Medford and Winne.)
  - curves

Hwy 97 (Klam. Lake)
  - black ice
  - rocks
  - need warnings

Expand Coos Bay

Hazmat response
  - mayday
  - quick identification of material

Cellular network-coverage needs improvement

Opportunities

Transponder pass to enter certain highways (199, 140, 97) for Motorhomes and Trucks

Technology to solve tight corners

Rock slide warnings

Hazmat-on board mayday
  - not just hazmat related

Ice warnings-detection

Interoperable transponders (i.e. prepass and green light)

In-vehicle control—“Smart Vehicles” to prevent accidents
Merge warnings
In-vehicle warnings
Dynamic downhill speed warnings
Broadcast road closures to trucking
Real-time weather conditions
Better weather data to those who close roads

Institutional Issues

Partners
Bend, Oregon

Tourism

Challenges

- Signing on Forest Service Roads
- Getting information to the user
  - Medium used
  - At rest stops
- Type of information provided
  - O&D
  - Who had the information-sharing info
  - Best route at specific time
  - Coordinate info
- Identify Local Needs
  - Get that information to the providers and decision makers
- Need for service info regarding fuel, food, lodging etc.
- More than one media
- Bilingual information to compensate for language barriers
- Lack of real-time info re closures and incidents
- Info coordination between DOT, county, states and forest service
- Distances between source of info and service and no alternative
- No mechanism to deliver pro-trip planning info
- Info not available in time or place to make choices
  - Locations between Burns and Bend, I-84, Idaho border, Siskiyous, Santiam Pass
- Old or conflicting info as to current road status (open or closed)
- Not enough opportunities to influence driver behavior
- How long will the traffic stoppage last (When will roads reopen)
- Congestion around/at rest areas
  - At capacity
- Tourism congestion in Bend, Sisters, Madras, Florence, Redmond, and other Coastal towns
- Weekend, Holiday, and other special events create excess traffic
- 2 lane roads do not have adequate capacity (possible need for shuttle service for events)
- Commute congestion between Bend and Redmond
- Overloaded circuits at DOT during incidents

Incident Management

- PSAP Respondent
- Highway numbering system is confusing
- Rural addressing and positioning
**Opportunities**

Low powered radio station (HAR) used for service info (is currently opposed by radio operators because of revenue competition with private industry)
Visitor association disperse information
GPS addressing (CAD Commuter Aided Dispatch)
Emergency response teams support and drive technology
Regional server
  - Push information to provider when incident happens
  - When situation changes
  - Across jurisdiction
  - Seamless
Public on road access to information
  - Visitors center south of Bend on HWY 97 short on funds could partner with DOT to use as a rest stop and information center
  - Provide equal access to all regardless of economics and language
  - Kiosks at destinations (High Desert Museum, Batchelor, and Newport Aquarium)
  - Phone access to information – preferably a person
  - Advantage of camera view of the situation
Central Clearance House
  - 1-800 number
  - Access from distance
Universal access to info
  - Letting travelers know accurate, timely and available information including weather and road information
Have a system for retrieving current road and weather information
Seamless pre-trip planning
  - Internet sites, links
  - Geographic
Value of prediction for pre trip planning
VMS good application
HAR
Maintaining information system
  - Information Radio
  - YATI
  - Direct people to visitors center
  - ADA access into phone tree
Personal Digital Assistant
  - Future applications
  - Current applications
In vehicle systems

**Institutional Issues**

Private Sector will deliver if there is a market
Kiosks-HAR
PDA-Beacon ready
Public Acceptability
- Simple, easy to operate and understand
Rural America as a market needs jurisdictional partnerships to attract the private sector

Solutions
Smart Card Concept
- Congestion pricing
- Enticement to off season usage
- Transportation planning – O&D
Shuttle Service
- Bend to Sisters
- Bend to Batchelor
- Coordinated Services
- Use school busses for rural transit and regular commute on “Deadhead” leg
Lewis & Clark bicentennial
- Mode to mode event smart card
- Apply “Travelocity” to tourism regardless of mode
- Trip planning
Institutional C0-op
Special event management

Safety and Emergency Services

Challenges
Long Distances/Isolated areas
Older Drivers
Lack of law enforcement
Lack of Communications
- Technology
- Agency to Agency operations/logistics
Wildlife/Livestock (S-97, 140, 395 Primeville County Roads)
Inappropriate Signing
Responding to Weather
- Sanding/Plowing
- Informing Public
Forecasting Data
High Water/ Flood conditions
Driver Behavior
Lack of funding/resources
Diversity of users (language barriers)
Unfamiliar motorists
Overdriving conditions
Jurisdictional issues/boundaries
Driver behavior (ignoring traffic control)
Damaged/vandalized signing
Lack of Samaritism
Rock fall/slide/tree road blockage
Smoke/fog hindering visibility
Higher traffic
Higher expectations of transportation system
Truck traffic on Highways 58, and 97
High volumes compete with community safety
Environmental sensitivity to sanding and widening roads (adding lanes)
Lack of funding/resources
Historical crash data, i.e. cattle drives disturbing infrastructure
Large geographic area
Increased hazardous materials movement
Lack of medical training
Pavement conditions data
Structural/non-standard facilities
Lack of services (gas etc.)

Institutional Issues
Understanding needs of other agencies
Mutual aid
Legal authority across boundary
Liability
Turf protection
Political/legal
Funding competition
Technology barriers
  -Inter operability
  -Proprietary
Joint purchase
Lack of staff/skills
Different customers/priorities/missions
Highway versus local priorities
Fear of technology
Lack of information on ITS/tools

Solutions
Communication/coordination
  -Multi-jurisdictional
  -Data sharing
  -Radio System
Automated data collection
  -Pavement
  -Weather
- Incident Detection
  - Call Box
  - Education
  - Real time TV
  - Vehicle transponders/mayday
    - Material info
  - Subsidize services in remote areas
  - Increased funding
    - Coordination of information
    - Allocation
  - Automated data collection on road conditions
  - Incident Detection through satellite imaging
  - Subsidize cellular coverage
  - Variable message signage
    - More detail including alternative routes
  - Medical training for first responders
    - Tools, supplies, and equipment
  - Translator/linguist
    - Incentives to learn
  - Call boxes
  - Education on where to get information
  - Pavement sensors with warning
  - On board sensors
  - Increased law enforcement
  - Automated enforcement
  - Speed monitors/retarders
  - Touch screen kiosks at rest areas
  - More rest areas with real time info
  - Highway advisory radio
    - Mobile HAR
    - Common frequency
  - Widening clear zone
    - Overpass and underpass
  - In-vehicle collision avoidance
  - Increased trucking safety

**Transportation and Commercial Vehicle Operations**

**Transit Challenges**

- Differences between urban and rural transit
  - Rural communities and remote areas lack transit (Lapine, Bend-Redmond)
  - Need to define realistic representation for transit in these regions
- Flexible fleet designs
- Accessibility of vehicles (transit)
- Liability of vehicle – who takes that on?
State law limitations
  - School bus
  - Disabled
Language barriers/low income restrictions
Cost (subsidy) to pay for services, operators, etc.
Transit boundary limitations
  - Service stops at particular boundary
Political sensitivity to certain partnerships
Public opinion of services offered
Dial-a-ride difficulties
  - Turns down passengers
  - Small capacity
  - Multiple barriers
Efficiency problems (disbursed population and low income population)
Land use planning (state wide planing)
Bend-Redmond-Primeville high volume of commuters
Lack of transportation for low-income
  - Mobility management

**CVO Challenges**

Need an improved method for weight/mile collection
  - Current cost is too high
Differences in transponders
Security issues
CVO traffic through towns trying to ID as “tourist” areas
  - Ex: Sisters and Redmond
Access management issue
Amount of traffic and location of traffic
Lack of information (safety issue, perception issue)
Logging trucks
Transferring accurate data on road geometric
  - Conditions = communication issue = information sharing
Passive vs. active signs
Animal migration
Improved road pricing system
  - County roads
  - Logging (short term use = lower quality of roads)
  - Wet weather
Tire pressure on different roads
CVO community and state DOT differences
Lack of information and knowledge for CVO

**Transit Opportunities**

Coordinate or put all services under and “umbrella”

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Western Transportation Institute
-Include casinos, privately operated systems, etc
Partnership opportunities
  -Schools (fleet sits unused for 12-14 hours per day and all summer)
Network casinos
Welfare to work funding
  -School initiatives 21st century school = movement from area to area
  -Synergize market to be created
Information technology = help with efficiency
  -Rural
  -Remote
  -Hospital
  -Emergency
  -Etc.
Statewide pass – Seamless network

**CVO Opportunities**
Utilize tourist/visitors centers, airports, etc.
  -Business partnership opportunities
Active signs (especially for special events)
GIS layers
  -Statewide database to be shared by all counties
  -Regular system of monitoring truck volumes
    *State
    *Regional
    *Use for economic impact
    *Resources
    *Look for and provide alternatives
Identify how shipping movements work (use technology to visualize)
Increase public awareness of need for freight
  -Coordinate state and regional
Educate public about the importance of CVO industry to the economy and our lives
(common ground between CVO and ODOT)
Identify realistic expectations about public transit and develop long term plans accordingly
  -All costs (people staying home due to lack of transportation, subsidies)
  -All benefits (educate employers on “what’s in it for them”)
Ex: Josephine City
  1. Clearing house/accurate database on who needs transit, their destinations, etc.
  2. Dynamic mapping to determine transit costs/benefits
  3. Coordinate existing providers – funds, schedules, insurance (if possible)

**Institutional Issues Regarding Transit**
Identify who rural transit users are (mobility) to plan for transit needs
  -Utilize databases
  -Schools do it every year
Can’t use school buses (while not being used) for other purposes
State law liability
  -Oregon Transit Association, California Transit Association, State Bar Association, etc
Insurance industry
  -Barrier to providing transit beyond a certain point
  -Costs associated with #/limit of passengers
Funding variations, eligibility requirements. “strings” to funds
Rules established by different providers
  -Mix of public and private (city, county, non-profit, etc)
Competition between different operators
  -Taxi/private providers need profit
Bring “transit” representatives to even COATS Stakeholders Meetings
  -Central Oregon did needs assessment and could use info
  -Community Action Agency Network
  -City of Bend will be doing a survey on their dial-a-ride service
Coordinating (but not having control)
  -Employer (Brightwood)
  -Housing (affordable)
Transportation System Plans need to synchronize work shifts (prepared by city/county) to make transit more cost effective
Ridesharing
  -Matching
  -Security measures

Actions
  COATS provide for technical mapping GIS
    -Outreach to all communities
    -Avoid duplication
    -Start to prepare for 2000 census
Lobby to amend state law
    -Determine barriers to coordination/cooperation
Initiate pilot project for transponder/GPS application for weight/mile tracking (both states?)
Statewide info sharing plan
Need umbrella for transit interests-providers, businesses, government, users, and advocates
Better monitoring of freight movement
Identify areas of common interest between CVO and DOT’s to start dialog and cooperation
Redding, California

Travel Safety and Emergency Services

Problems/Challenges
- Highway 3 & Highway 36
- Highway 299 Oregon Mt. to Big Bear – mountain passes
  - No shoulders
  - Slide material
  - Lack of guard rails
  - Blind spots
- Highway 20 – 4 mile death trap
- Timeliness of information
- Real-time information needs
  - Make information usable
  - Get it to the traveler
- Warning signs
- Jurisdictional issues
- Safety during incident response – Quick response
  - Advanced notification
  - Traffic control
- Recreational traffic
- Lack of turn-outs
- Funding money
- Geometry – sub standard
- Icy bridges
- Lack of agency communication
- Lack of public education
  - User friendliness
- Lack of cellular coverage
- Turning evaluation into results
- Dispatching emergency vehicles
- Fleet management

Opportunities
- Possible use of call boxes
- RWIS Remote Weather Information System
- Variable message signing - changeable
- Traveler information
- Public education
- Cameras – strategically placed for surveillance
- Highway advisory radio
- Real-time information distribution
Real-time weather information
Priority communications
Bridges – automated de-icing
Railroad technologies for fleet management
Dynamic message signs
  Mobile or permanent
Passing maneuvers technology
Full cellular phone coverage
Traveler information
  Real-time
  Weather
  Incidents / emergency
Internet – Agency access to information
Mayday systems
Railroad crossing

Institutional Issues

Partners

Travel and Tourism

Problem/Challenges
  Information to people
  Communication gaps
Travelers pass through community
  Need people to stay in community - $$
Newly incorporated cities
  Starting from ground up
  Highway 151 passes through city
  More promotion to city
  Public information regarding services
Tourist bus service to dam
Tourist activities and services in city need to be published better
Long approval process for public information signs - Reservations
Signage issues with government agencies (Caltrans)
  Criteria for destination signs
  Follow up signage
Casinos – Reservations
  Who is responsible for signs
  Appropriate placement of signs
Highway 20 – Robinson – safety issue
Safety
  Road conditions information is not timely or accurate
Provide real time road condition information on Internet
Are we providing information that travelers are not using?
Provide information with further advanced notice – miles
Weighting of information dissemination methods – brochures, Internet
What are tourist points of interest on a regional basis?
Itinerary travelers vs. non-itinerary travelers
  Through trips vs. destination trips
Information to leisure travelers
Trinity County
  Highway 299
  Highway 36
Mountain ranges travel conditions
  Curved roads
  Signage
  Long distances between services
Caltrans signage criteria seems strict – not enough notice for travelers
Obtaining corporate demographics for study area
  Fast food and gas station demographics
Redding is a regional hub
  Needs better signage
  Local and special event congestion
Lacking man power and equipment to manage special – local events
Information dissemination regarding special events
Local events may have regional impacts – e.g. Reno’s “Hot August Nights”
Reader board on Highway 299 for traffic diversion
More advanced notice of snow warnings – e.g. chain requirements
Upstream signs for tourist destinations
Insufficient funds for projects – O&M
Vandalism of rest areas and kiosks
Signage of preferred routes

**Opportunities**
Highway Advisory Radio and Changeable Message Signs for non-emergency or road condition purposes
Remote promotional signs
Tax Interstate businesses for Highway Advisory Radio funding
Road conditions and tourist information recordings played at rest areas
Information Kiosks
  Road conditions
  Weather conditions
  Tourist activities
  Recommended locations
    Fast food clusters
    Weaverville
Susanville
Big parking lots – shopping centers

HAR locations
Upstream of Baughart
I-395
Highway 20 from I-5 to 101
Lassen to Red Bluff – especially last 8 miles

Bank Smart Cards for recording of purchases and transportation uses
Transit dependent
Regional server for multiple agencies
Regional calendar of activities, events, festival
Centralized database – neutral champion
Contributions from regions to develop and maintain database
Golden Triangle tourist map

Institutional Issues
Caltrans signage
Caltrans communications and priorities with counties
Caltrans – better use of 1610 AM
Shasta Lake – step child
Economically depressed, high poverty
TDA funding
ADA access in Redding is poor
Streets and Roads vs. Transit
City vs. County
City incorporation
Declining timber $ for the Forest Service impacts roads
Local control issues over ISTEA & TEA21 money for tourism

Partners
Recommended
Hotel associations
AAA
Grant administrators and resource people
FHWA
Federal Lands
Scenic Byways people
California Department of Tourism
Auto Industry
Cell phone companies
Sheriff’s Department
Chambers of Commerce
Yreka
Mt. Shasta
Commercial Vehicle Operations

**Problem**
- Information accuracy and timeliness on Highway 96 and alternative routes
- Bicyclists on two lane highways without bike lanes
  - Especially – 299
  - -44
  - -89
  - -96
  - -97
- Motor home/trailer drivers cause congestion, traffic delays, and safety hazards
- Inadequate signage and use of pullouts
- Difficulty returning to road from pullouts
- No parking available in Redding, Yreka, Medford and Bend
- WIM regulations for purely non-interstate truckers
- No current centralized COATS location for travel info in both states
- Lack of cellular coverage
- CB radios are unreliable over long distances
- Inadequate HAR (highway advisory radio) and signage
- Weigh station backups into highway
- Multiple types of operators have different needs
- May need intermodal facilities coordinated with rail

**Opportunities**
- Centralized dispatch for info (covering both states) through an “800” number and or kiosks
- User friendly, internet-like kiosks with current and relevant road and weather info
- Kiosks should be available at relevant decision making points where trucks are able to pull off, find parking etc.
- Utilize dispatch and brokers to spread info
- Long term “heads-up” display
- Information should be marked with a time stamp
- Accommodation for multiple types of operators
- Kiosks should be partnered with truck stops
- Need CCTV images on webpage

**Institutional Issues**
- Deal with multiple government agencies
- Different state laws/limitations
- Paperwork
- Shippers impose unrealistic timelines resulting in safety issues
- Rail is federally subsidized. ‘Competition’ with rail makes cooperation difficult (intermodal)
CTA does not adequately represent smaller CVO companies
65/55mph zones for cars/trucks are not safe for passing or for loaded trucks to stop
State laws may prevent some technologies from being used
Little enforcement in rural areas
Interference of hazmat regulation (lethal vs. non-lethal cargo)E.P.A.

**Actions**
- Devise accurate info dissemination
- Streamline rules/limits in area
- Communication: gaps, consistent info numbers
- Sensitivity towards CV industry and their importance to the economy

**Summary**

**Problems:**
- Information accuracy and timeliness (time stamp)
- Communication gaps in cell coverage
- Parking and pullout availability
- Too many WIM rules and regulations
- Lack of intermodal facilities
- Different operators create varied needs and solutions

**Solutions/Opportunities:**
- Centralized dispatch/ 800 number
- User-friendly kiosks with relevant info (ie truck stops vs. rest areas)
- Heads-up display info (long term)
- CCTV images on kiosks partnered with truck stops

**Institutional:**
- Too many agencies creating too many rules
- CTA representation not adequate for small companies
- Too much EPA/hazmat regulation
- State laws limit some technologies
Eureka, California

Travel Safety and Emergency Services

Problem
Accurate info (route 199)
Communications ie, call box vandalism, cell phone/radio reception, and 800 numbers
Rock and mud slides
Narrow clearance on two lane roads with out shoulders
Animal migration causing animal/vehicle damage, RNP collisions
Road closures limiting access to services
Locating and accessing accidents (critical areas rte.199, 162,299,36,96,&169)
Tourist viewing wildlife causing road hazards (ex. McDonald Creek)
Construction sites
Ice on RNP bypass (Laytonville to Willits, Legget)
Fog – 101 Laytonville and Willits
  - The Bluff north of Klamath
  - Last chance grade
  - Eureka to Arcata
  - Blue Lake rte.255
Pedestrian and Bicyclist accidents in Eureka
Pedestrians congesting intersections Willits, Broadway, RNP
Roads with narrow or no shoulder
  - Pedestrian accidents in Covelo and Mendo Counties
  - Bicyclists following vehicle rules
  - Slippery conditions such as debris and oil
  - Visibility of roadway lines
  - Logging and gravel trucks on two lane highways
  - Tourists viewing scenery without turning off main road
  - Shortage of road turnouts
  - Road damage or instability

Opportunities
AM radio signal/ HAR placement
Electronically controlled changeable message signs
Mayday devices in vehicles
Increased cell phone /short wave radio coverage
Call boxes in urban and rural areas
Cable TV road conditions updated frequently by CT and CHP
Web page on 800 number
Rock/mudslide detectors at problem locations
Ice detectors in pavement as part of rehab projects
Reduced speed limits on narrow highways
Warning devices at accident prone areas (guardrails and signage)
Education
  - Number of fatalities at given locations
-Animal migration habits
Animal detection/warning/signage
Devices to keep animals off of roadways
Control vegetation along highways to deter animals from roadways
Provide areas (turnouts) for tourists to view wildlife
Route 96 “open range” fences
Identify/Post migration corridors
Communication to emergency services to get to sites
Train ER teams re hazardous material spills
  -Volunteer fire crews
  -CHP to train First Response personnel
Communication: cell phones, radio, public and private partnership
Educate travelers, CT and CHP of communication gap locations
Mayday devices in vehicles

**Institutional Issues**
- Environmental constraints
- Terrain
  Location of highways near rivers, loose banks etc.
- Get CTS/RTPAS to prioritize ITS projects
- Funding between various agencies for improvement
- Technology-lack of/funding of
- Laws impacting reducing speeds
- Lack of legislative support of ITS projects
- Lack of education regarding ITS projects
- Licensing of RV drivers
- Lack of private interest contributions
- Sharing of data between decision makers
- Regulatory barriers

**Summary:**

**Problems**
- Communication
  -Cell phone coverage
  -Real time, accurate info
  -Inability to convey hazards
  -Availability of public information
  -Notification of events
- Engineering
  -Roadway alignment and width
  -Geology
  -Intersections
  -Accommodations for pedestrians and bicyclists
  -Lack of turnouts
  -Clear recovery zones for vehicles
  -Animals on or near roadways
Legislation
- Conflicting data
- Conflicting goals and laws between agencies
- Lack of info for politicians regarding ITS
- Higher maintenance costs result in lack of new project money
- Environmental constraints

Opportunities
Communication
- Electronically controlled changeable message signs
- Public/Private partnerships in information sources
- Call boxes
- Radio stations
- 800 number/web site
- Cable TV message
- Mayday devices
- Warning devices at high accident areas

Engineering
- Sensors for ice, fog and slides
- Barriers along roadway or underpasses
- Striping
- Include bike lanes
- Increase signage

Legislation
- Education
- Joint funding of projects
- Research into additional/alternate sources of funding
- Public/Private partnership

Public Transit and Fleet Operator/Maintenance

Problem
- Limited services do not include evenings or weekends
- Rest areas on 101 south to San Francisco
- Stop signs
- Transit to trails – Pedestrian and cyclist integration
- Intermodal connectivity – Optimize system
- County/city service coordination
- Student services
- No service north of Trinidad
- Eureka/Redding services – public/private operation
- Air quality impacts
- City fixed route schedule
- 1 hour headway during off commute hours and weekends (nonexistent)
- Farebox ratio requirements
-Less frequent service results in reduced usage
-No service between 101 and I-5
Lack of safety at bus stops
Poor fleet maintenance
Fuel access (clean fuel)
Not user friendly to cyclists

**Opportunities**
- Smaller vehicle serving direct routes
- Getting demand data
- Connecting with potential partners
- Combine funding sources
- Making transit attractive to non-dependant users
- Initiative
- Multiple destination trips
- Student subsidized pass
- Accessing bus stops
- Safety at bus stops
- Infrastructure MTCE for non motorized transportation
- Alternative fuel vehicle
- Getting the fuel here
- Retool maintenance
- Bike racks on buses (currently require permits)
- Efficient system to load bikes
- Utilize existing rail R/W
- Demand responsive service-know when riders are waiting
- On board safety (automatic vehicle location system)
- Life cycle costs amortization
- Special event service or intermittent service
- Computer aided dispatch
- Expanded personalized public transit funding/farebox ration
- Piggyback with welfare to work providers
- Involve private sector
- Land use planning

**Summary**

**Problems**
- Expand service geographically and schedule
- User does not know when bus will arrive
- Need for efficient bike loading and unloading
- Funding

**Opportunities**
- Coordination between agencies
- Automatic vehicle location system
Automatic passenger locator/demand
Notification back to passengers of bus location and arrival time
Interactive kiosks for info

Travel and Tourism

**Problem**

ITS uses for disabled
Access roads off of I-5 (to Covelo)
County roads in rural communities
Tourism and linkage to state highways
Economic growth
Lack of tourism promotion
Arcata /Welcome center kiosk
  -Best routes, traveler information, road report
Signage
  -Service information
  -Improve signage in Arcata area between Highway 101 and Highway 299
  -A CMS is needed to state road conditions at the 101-299 interchange
  -Indication of Indian Reservation Locations along Hwy 101
Lack of information on road conditions on Hwys101 and 299
Slides along Hwys 101and 299
Availability and time of road conditions
Upstream information regarding road conditions
Information is needed for disabled regarding transit and traveler services
Isolated residents along Hwy 162 and 101 need signage re. seasonal access roads
Tourist destinations need better signage
I-5 has steered travelers away from Hwy 101 and decreased the number of tourists to the Redwood Empire from 3-4 million (1978) to 700,000 (current). It has also changed the national and regional origins of the visitors
800# and CT internet site are not accurate. Road closures and reopenings are not being reflected on site and are affecting tourism.
ODOT and CT sites are not cross linked
800# and internet sites are controlled by Sacto HQ rather than maintained locally
National Park Road closures are difficult to detect, transmit and convey to public
  -ex. Newton Beach in Redwood National Park
Invisible barrier between NPS and surrounding gateway communities; need better communication system
Poor road conditions on city, county, and access roads on reservations
Tourism information regarding reservations needs improvement
  -Currently reservation information is distributed by TV, radio, and newspaper
Pass information is not timely (199 and I-5 interchange lacks road condition information)
Reopenings are not posted
Slow moving vehicles on two lane highways
CT and local jurisdictions generally do not allow signage
Scenic corridor/byways do not allow signage although this would help economics
Increase in number of RV’s on the roads with inadequate number of collection centers and RV parking
Radio HAR is maintained by government and has a limited range
  -HAR is used 5% of the time
  -Private organizations should have some control over HAR
  -Lack of tourist information on HAR
  -If HAR is used for tourist information less signage would be required
Elk herds on parts of Hwy 101
Lack of controls and signage on “Narrows” (common site of accidents) on Hwy 199
Environmental constraints on Highway modifications
Parking issues along roadside
Lack of parking at HSU
Need for interregional tourist planning as some sites are spread out
Ice on NP roads
Overhanging trees on Hwy 101 near Richardson’s Grove
Fog conditions in Del Norte county and Redwood National Park at Last Chance Grade
Wilson Creek Bluffs falling into the ocean
Lack of cell phone coverage throughout the region

Opportunities
Detection
  -Visibility
  -Slides
  -Wide loads
  -Breakdowns
  -Travelers do not know where they are
  -Automatic location by call box
Kiosks
  -Audible information
Improve HAR
VMS
Broadcast FAX
Sensors
  -Paratransit
  -Local/Regional information advisory
  -Invisible fence for animal warning
Regional tourism coordination
Regional services-to connect regional tourism information
CC TV for mountain pass conditions and other road conditions
No to “Smart Cards”
Remote “CAM” display of pass or general conditions
Display on kiosk at visitor center for pass conditions
Portable digital assistance devices targeted at RV users
“Traveler Radio” for road and travel conditions at rest stops
800# for local conditions
Weather radio channel

Summary

Problems
Accurate and timely info
Road conditions with verification of clearance
Local vs. regional info
Improvement of HAR
  -Broadcast
  -Only used 5% of the time
  -Tourism services
Need for better service/attraction information
Geographical challenges
  -Slides
  -Pass conditions
  -Fog/visibility
Environmental constraints

Opportunities
VMS
VMS with Adverts
HAR with tourism services
CCTV Mountain passes etc
Kiosks
Detection
  -Wide loads
  -Road conditions
  -Slides
  -Incidents
  -Call box (auto)
Broadcast FAX
Regional server/Local adv.
800#
Internet
Weather radio channel
Portable digital assistance
Animal/vehicle warning

Commercial Vehicle Operations

Summary

Problems
Restricted access to external markets
-Hwys 199, 101, and 299 can not accept interstate rigs

Weather related highway problems
Over-length/restricted rules and regulations
Lack of information (real time and future)
  - Weather
  - Events
  - Construction
  - Road Closures
  - Incidents
  - Maintenance
Unfamiliar travelers/RV tourists
Conflict of vehicle types (trucks, school buses, bicycles)
No common focal point in this area

Challenges
Access for large trucks
Bottlenecks
Length restrictions (Highways 199, 299, and 101)
Road closures
Communication/cellular coverage
Construction delays
Timely information
Tourists/travelers

Opportunities
Communication
Real-time information
Someone to speak for rural communities at state and federal levels
System of access and funding
“User friendly” options

Institutional Issues
Funding Sources for proposed solutions
Reluctance to automate/change
Lack of cab space
Language/communication
Training needs/capable drivers
Solutions should be user friendly
Multiplicity of single truck operators
CTA (may not address small/rural operators)
Logging/shipping
RWIS
Construction/Maintenance
Incident response info
Centralized communication distress to dispatcher
  - Information as needed
- Efficient weigh scales etc/automated
- Mountain passes
Collision warning systems
Reflective pavement markings
Improved visibility in fog
Interstate vs non-interstate CVO
Uniform policy between states
Hazardous material
  - On board kits
  - Emergency response communication
Non-Caltrans maintenance

Focus Areas
  Brushy mtn.
  Redwood bypass
  Redwood Creek 299 Ellis to Beary
  199 Del Norte Ct.
  Campers/pullout
    - Unfamiliar drivers
  Intermodal hubs necessary
Weight restrictions
State to state differences
  - Weight laws
  - Hours of service

Summary

Problems/Challenge
  See above

Institutional Issues
  Funding
  Reluctance to change
  Lots of single truck operators
  Lack of cab space
  Training needs/capable drivers

Actions
  Improved communication
    - Technical and institutional
  Infrastructure based solutions that are environmentally acceptable
  Access to funding-timely system for addressing needs
  Get impaired driver off of the road