Clarus Use Case 5: Enhanced Road Weather for Traveler Advisories

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Road Weather Management Stakeholder Meeting
Albuquerque, NM
Session 11: September 8, 2011
Functionality of the Tool

• Forecasts of pavement conditions up to 12 hours out
• Restricted to Interstates
• Integration of atmospheric conditions and road surface conditions, with presentation in looped view
• Multi-state view
What We Evaluated

• State DOTs’ perceptions of usefulness of the tool
• State DOTs’ interest in making further investments in the tool
• Travelers’ perceptions of the tool’s informational value
• Users’ perception of enhancement to safety and mobility
• Drivers’ decisions to adjust travel plans and behaviors in response to weather
• Value to long distance and cross-state travelers of the new information provided consistently across state boundaries
Evaluation Approach

- Two focus groups in SD in early summer 2010 with general and commercial travelers regarding reactions to experimental website and 511
- Web surveys in ID, MT and ND Jan-Feb 2011 with 216 traveler information users to assess value/benefits/uses of new pavement condition forecasts
- Interviews with state DOT operators to assess how they used the tool in practice
Results Summary

• Focus Group Findings
  – Users say they value pavement condition forecasts
  – Users want demonstrated real-time accurate information on Wx
  – Visual images preferred; travelers like the radar loop (trend) forecast
  – Information on road closures critical; if road open, will go regardless
  – CVOs desire 12-24 hr advance Wx information for planning
  – Uniformity of information across states is important to CVOs
  – Would like ability to toggle through simplified, layered information
Results Summary

• Web survey results (216 responses)
• 58% visited website 10+ times in prior 30 days

• Number times used road weather information to change travel in prior 30 days?

74% of respondents say they are adjusting their travel plans or execution based on Wx information.
Results Summary

- Type of trip you are planning with this website visit?
Results Summary

• Usefulness of information across several states?
### Results Summary (all respondents)

<table>
<thead>
<tr>
<th>Agreement/Disagreement with Statement</th>
<th>Agree</th>
<th>Neutral or No Opinion</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The new pavement condition forecasts are a good addition to the regular website information.</td>
<td>83%</td>
<td>11%</td>
<td>6%</td>
</tr>
<tr>
<td>I would like our DOT to integrate this new forecast information permanently into the DOT’s website.</td>
<td>78%</td>
<td>13%</td>
<td>9%</td>
</tr>
<tr>
<td>I am using the new pavement condition forecasts in deciding when and how to travel.</td>
<td>60%</td>
<td>28%</td>
<td>13%</td>
</tr>
<tr>
<td>I expect to change my trip plan (timing or routes) based on the forecast information obtained on this visit to the experimental website.</td>
<td>48%</td>
<td>34%</td>
<td>18%</td>
</tr>
</tbody>
</table>
## Results Summary (all respondents)

<table>
<thead>
<tr>
<th>How useful do you find this new website as a source for:</th>
<th>Useful</th>
<th>Neutral or No Opinion</th>
<th>Not Useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing current pavement conditions?</td>
<td>87%</td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td>Helping me avoid hazardous routes?</td>
<td>86%</td>
<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>Helping me improve my preparedness for a driving trip?</td>
<td>86%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Providing forecast pavement conditions?</td>
<td>84%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Helping me decide whether or not to postpone or cancel a trip?</td>
<td>79%</td>
<td>15%</td>
<td>6%</td>
</tr>
<tr>
<td>Helping me decide between different possible routes?</td>
<td>77%</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>Providing a repeating loop image of conditions?</td>
<td>77%</td>
<td>21%</td>
<td>3%</td>
</tr>
<tr>
<td>Helping me decide when to start my trip?</td>
<td>75%</td>
<td>18%</td>
<td>7%</td>
</tr>
</tbody>
</table>
Selected Respondent Comments

• Include information for secondary routes, in addition to interstates [most frequent comment]

• “Average” web users will have difficulty getting through all the detail in the new site – simplify it.

• Will take time to build confidence in the forecasts.

• Information across multiple states is most useful. Add more adjacent states.

• Forecasts only to 12 hours not so useful for longer trips. Provide 2-3 days out.

• Turn this into an iPhone app.
Some Lessons

• Individual state DOTs will need to figure out best ways to integrate pavement condition forecasts into their presentation of traveler information

• Travelers desire a one-stop place to get Wx info

• Forecasts over longer timeframe better for long trips

• Travelers want route options as conditions evolve

• Travelers want comparable information for their entire route

• Simplify the presentation and emphasize graphics over text
Panel Discussion: Multi-State / Multi-Jurisdiction Road Weather Information

• Vision of success, focusing on road weather
  – Where are we now?
  – Where would we like to be in 5-10 years?

Panel Members:
• Leon Osborne, Meridian
• Doug Galarus, WTI
• Tina Greenfield, Iowa DOT
• Denise Inda, Nevada DOT
• Theresa Bousliman, Montana DOT
Panel Discussion: Continued

• What needs to happen to get there?
  – Strategies for engaging stakeholders (state DOTs; vendors; travelers; others)
  – Road weather data & information requirements for multi-state travel
  – Effective dissemination methods & formats to present the information (need for standards?)
    - By corridor
    - By region
    - National
  – Costs/funding
  – Other gaps & challenges?

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