



Enhanced Road Weather Content for Travel Advisories

Clarus Regional Demonstrations

Statewide transportation information systems need road weather and road condition forecasts to improve safety and mobility for transportation users.

Under the *Clarus* Initiative's regional demonstrations enhanced road weather content was developed for traveler advisories that combined observed and forecasted weather and road conditions into a multistate traveler information system.

The Initiative involved two regional demonstration projects where state and provincial departments of transportation provided ideas for five new potential uses for *Clarus* data.

The *Clarus* Initiative, a joint effort of the U.S. Department of Transportation Intelligent Transportation Systems (ITS) Joint Program Office and FHWA's Road Weather Management Program (RWMP), is a six-year effort to develop and demonstrate an integrated weather observation data management system that can reduce the impact of adverse weather conditions on surface transportation.

This use case utilized an innovative message generation engine (MGE) that incorporated analyzed road conditions and weather

information from Interstate highway segments across a five-state region. The MGE developed appropriate messages regarding the nature, severity, and timing of detected and forecasted adverse travel conditions using the following data sources:

- *Clarus* System ESS and quality control data;
- *Clarus*-enhanced precipitation analyses;
- Meridian road condition forecasts; and
- Private-sector weather forecasting.

Figure 1 shows information generated by the MGE. The generated messages followed a sophisticated decision tree approach to avoid disseminating conflicting information with state DOT reports.

As a rule the MGE messages were supplements to agency reports of good driving conditions when analyses and forecasts indicated less than good driving conditions. As reported conditions deteriorated, the traveler information system deferred to the current agency reports.

Figure 1. Precipitation and Road Condition Forecast

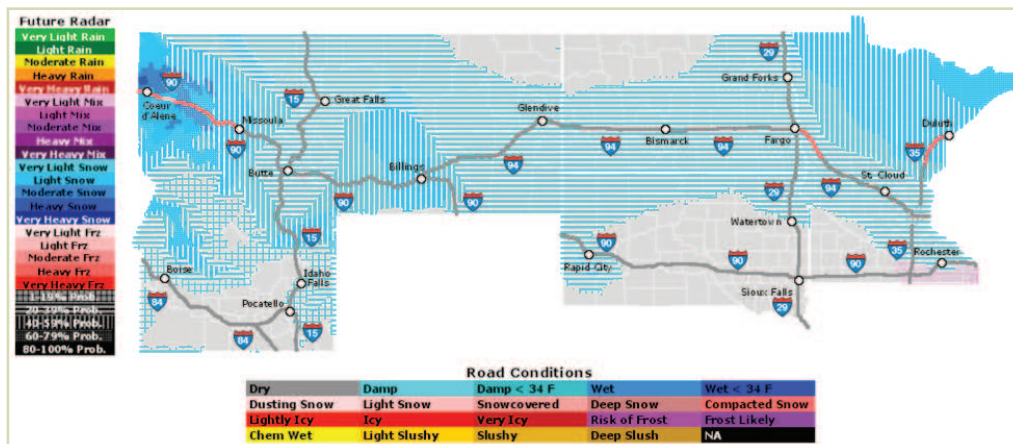


Figure courtesy of Meridian Environmental Technology, Inc.

Users tested *Clarus*-enabled traveler information using Meridian Environmental Technology's 511 traveler information system in Montana, North Dakota, and South Dakota as shown in Figure 2. Participants in the study retrieved current posted road conditions, forecasted road conditions, any possible construction and events present, and weather information.

Figure 2. Road Conditions

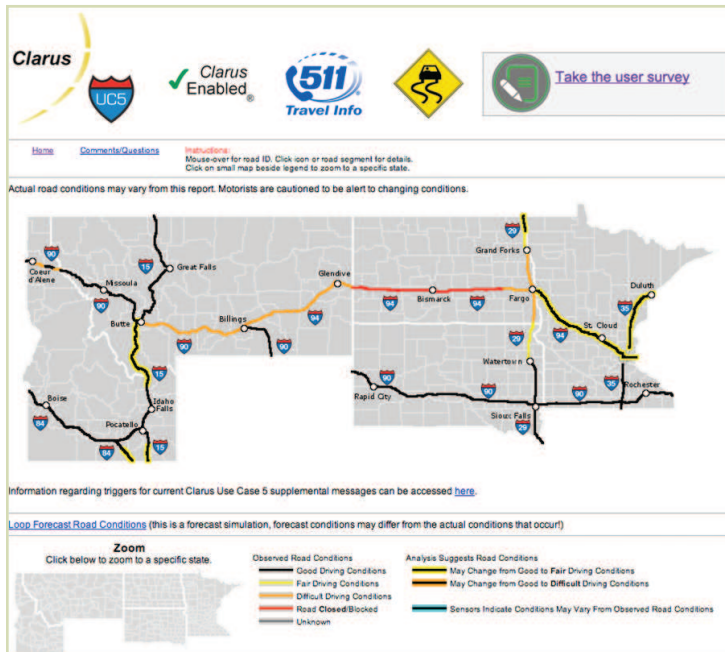


Figure courtesy of Meridian Environmental Technology, Inc.

Response to the *Clarus* Regional Demonstration traveler information portal from the public has been very positive. Users especially appreciated the fact the information was presented in a multistate format which made it easier and faster to access the information they needed.

The system was able to create this function by accommodating the wide differences in the functions of participating agencies existing traveler information and road condition systems. To also help travelers, the system designed messages that were succinct conveying the needed information on the nature, timing, and severity of the threat without overstating conditions.

The benefits of a *Clarus*-enabled traveler information involve improving the ability of drivers to plan for adverse travel conditions through a multistate information system for Interstate travel as well as forecasts on weather and road conditions.

The research team and the participating agencies also gained increased knowledge on what is required to develop and implement such a system as well as a better understanding of how the public would handle this new concept.



The *Clarus*-enabled traveler information system would alert drivers to road closing such as the one shown above. Photo courtesy of John M. Osborne, © 2008

To obtain a copy of the software, please contact Paul Pisano of the RWMP.

All photographs courtesy of RWMP except as otherwise indicated.



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"Anytime, Anywhere Road Weather Information"

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