

**A New Source of Road
Weather Information
is in the Forecast.**

FORETELL™

Winter weather costs us lives, time, and money.

We see it coming every winter, but not soon enough — the adverse road conditions that result from snow, ice, fog and high winds. And every year we suffer the consequences: \$2 billion a year spent on snow and ice control, lost time and money due to reduced accessibility to urban and rural economic centers, and, tragically, over 1,150 crash-related deaths every winter in the U.S. and Canada.

We need a comprehensive road weather information source.

While there is no shortage of weather information, there is a shortage of *road weather* information — i.e., information about road conditions due to the weather. FORETELL fills this gap by offering road weather information that is detailed, timely, relevant and easily accessible via the Internet. FORETELL collects, forecasts and distributes highly specific road weather information that is pertinent to highway and trucking professionals, everyday commuters, long-distance travelers, transit operators and all other road users. System features:

- ◆ Detailed weather forecasts generated four times per day and 24 hours into the future; hourly updates (called nowcasts) that generate current weather conditions.
- ◆ Data provided at 10-km gridded resolution, which allows for weather predictions every 10 kilometers rather than the 32 km in national weather models. This increases the ability to pinpoint which areas are being affected by winter weather conditions.
- ◆ Gridded atmospheric weather forecasts and nowcasts mapped to interstates, U.S. and state highways to predict pavement conditions.
- ◆ Gathering and translating the atmospheric and road condition information from specific road points to generate “plain English” descriptions of the road and weather conditions.
- ◆ Making full use of the Internet and telephone systems to distribute road and weather event descriptions on demand, with fax, pager and e-mail notification capabilities on the way.

FORETELL is a multi-state initiative covering the Upper Mississippi Valley region and funded in part by the Federal Highway Administration. Participating states include Iowa, Missouri and Wisconsin. Its mission is to create a road weather

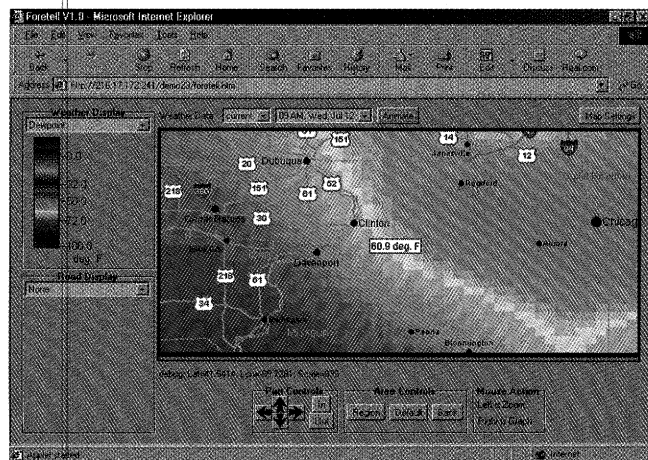
information system fully integrated within a wider set of Intelligent Transportation System (ITS) services to enhance safety and facilitate travel throughout North America. FORETELL makes use of state-of-the-art National Oceanic and Atmospheric Administration/National Weather Service (NOAA/NWS) and Environment Canada data sources and models, plus road sensors and mobile platforms. The result? The most detailed weather and road condition information currently available.

FORETELL is implementing proven approaches to pavement condition forecasting developed in Europe, and is adapting these approaches to address conditions specific to North America. The project is also building on public and private partnerships to establish rural ITS Service Centers. This will help utilize the full range of commercial and ITS traveler information media to distribute free safety information and tailored information services to travelers, state and local Department of Transportation (DOT) maintenance personnel and others.

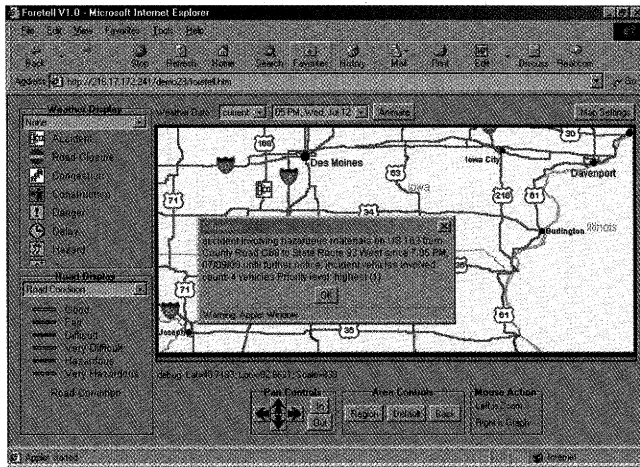
What this means for everyone.

There's no underestimating the positive effects of distributing current and accurate road weather information ranging from precipitation intensities, to pavement conditions, to wind speed and direction.

Highway professionals and maintenance chiefs will be able to make more informed decisions about the roadway network. FORETELL will become a support tool, enabling users to see conditions changing on-screen, hours before they witness it with their own eyes. They'll know when to call for additional



vehicle operators, whether to plan for split shifts in a long-duration storm, whether to pre-treat the roads with anti-icing materials, and when and where to spread de-icing materials. They'll be able to more effectively manage their staff and materials while maintaining high levels of road service. This will save money and, most importantly, lives.



State and local DOT operators will be able to detect changing road conditions sooner, and provide advanced warnings and information to the public. The public will in turn be able to make more specific travel decisions, based on highly detailed weather warnings and information—whether it's changing a travel time, mode of transportation or even delaying a trip. This will ease traffic congestion, reduce fuel waste and lower the number of on-the-road injuries and fatalities.

Our long-term goals and objectives.

FORETELL helps all the project partners achieve their goals, including:

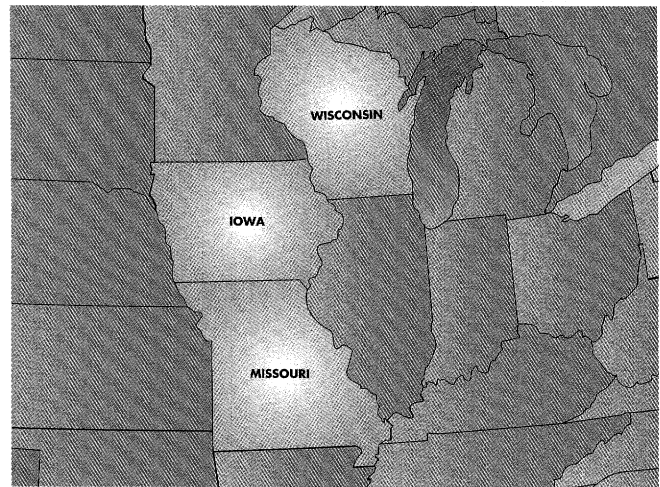
- ◆ Addressing the goals of the rural ITS Strategic Plan. That means enhancing safety, economic productivity, mobility and the environment along the nation's rural roads.
- ◆ Establishing an integrated road weather system that crosses state and national borders. FORETELL is committed to providing a single "one-stop information shop" for users to collect road and weather condition data. This will ensure a seamless distribution of data—specifically tailored to FORETELL users—consistent in method and format, reducing the amount of confusing and contradictory information.
- ◆ Pulling together all of the existing weather and road condition data sources. Rather than limiting itself to one or a few data sources, FORETELL is designed to integrate information from all available sources. This includes NWS, Environment Canada, private value-added weather services, mobile platforms and environmental sensor stations along the roadways.
- ◆ Having the flexibility to evolve and further innovate as the system grows. FORETELL has been designed to

integrate fast-developing technologies, changing customer applications and increased expectations. It accommodates the user with additional functional components that simply and efficiently incorporate new forecasting models and software development.

- ◆ Substantially cutting costs and enriching the environment with greater forecasting detail. Improvements and increased micro resolution (1- to 5-m) will allow forecasters to more precisely predict road conditions. This will, in turn, enable maintenance vehicles to substantially reduce the amount of chemicals required to control ice on the roadways. All the while maintaining a high level of roadway safety.
- ◆ Ensuring that road weather information is timely and accurate. Detailed, location-specific forecasts and hourly nowcasts are essential. The numerous advances in meteorology, computing power and telecommunications have created a situation in which forecasters have more to offer road operators and users than ever.

See where weather and traveler information can take us — right on the Internet.

While FORETELL may not yet be available in your area, you can discover what the federal government, state agencies and private companies can achieve when they concentrate their technological and intuitive resources. For a demonstration of



States participating in the federally sponsored field operational test.

FORETELL's unique capabilities log on to our web site at: <http://www.foretell.com>. For more information, call Paul Pisano at 202-366-1301 or e-mail at paul.pisano@fhwa.dot.gov.

