South Dakota Weather-Responsive Traffic Management System

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The South Dakota DOT is currently developing a weather-responsive traffic management system that builds upon the capabilities of the existing traveler information system but adds new functions based upon predictions of weather and resulting road conditions, weather warnings issued by the National Weather Service, and mobile data reported from winter maintenance vehicles. The concept of providing road condition forecasts to travelers was explored in a previous FHWA project that included development and demonstration of a road condition forecast tool in five States including South Dakota. The project showed a new dimension of weather information for travelers by providing enhanced road weather forecast information for Interstate highways on both the DOT web sites and a weather-based 511 system.

The new SDDOT Weather-Responsive Traveler Information System will include website, 511, subscription text, e-mail alerts, and mobile apps. In addition to the standard road weather information from static sensors like precipitation and temperature the new system will report wind advisories, NWS warnings, and other mobile observations. The taxonomy of conditions reported and forecasted will be more detailed than the existing system, which only generally advised that conditions might worsen. Route-specific conditions will be reported and forecasted for every state highway segment, and mobile observations will be used to determine current and forecast conditions. This presentation will describe the system and the results of its preliminary deployment. The project includes an evaluation period of one full year to span the complete range of seasonal conditions.