Road Weather Tools

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On average, there are over 5.8 M vehicle crashes each year of which 23% are weather-related. Weather-related crashes are defined as those crashes that occur in adverse weather (i.e., rain, sleet, snow, fog, severe crosswinds, or blowing snow/sand/debris) or on slick pavement (i.e., wet pavement, snowy/slushy pavement, or icy pavement). The vast majority of most weather-related crashes happen on wet pavement and during rainfall: 74% on wet pavement and 46% during rainfall.

These numbers continue to tell a story that road weather affects the safety and mobility of the traveling public. In order to mitigate these road weather impacts, near real-time atmospheric and road weather observations must be available; decision support tools must be utilized; and impact messages must be disseminated. With the advent of connected vehicle technology, a wealth of data will be made available. Most, however, will need to be converted into usable information for the road weather community, decision support tools, connected and automated vehicles, and the traveling public.

In this presentation, we will discuss the following:

Pathfinder Project: A collaborated effort between departments of transportation, National Weather Service, and private sector weather provides to create a collaborated impact message for the traveling public.

Integrated Modeling for Road Condition Prediction: A tool that incorporates real-time and/or archived data plus ensembles of forecast and probabilistic models then applies algorithms to predict real-time and forecasted road conditions.

Road Weather Performance Management Tool: A tool that utilizes transportation data, weather and road weather data, and connected vehicle data to determine the road condition and notify drivers inside their vehicle about slick conditions, backups (queue) and speed recommendations.