



ROAD WEATHER FORECAST QUALITY ANALYSIS

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Introduction

It is just as important to keep the highways functioning in a safe and efficient manner as it is to construct them in the first place. Our economy is built around an efficient transportation system. Winter weather plays an important role in highway operations, and accurate weather forecasts help the maintenance forces plan for weather events.

Project Objective

The purpose of this research is to enhance the use of KDOT's Roadway Weather Information System by improving the weather forecasts themselves and raising the level of confidence in these forecasts.

Project Description

Monitoring of the forecasts is necessary to assure that their accuracy meets the expectations of the agency. However, to properly evaluate the forecast quality, accurate sensor data from the monitoring stations are essential. The researchers found that at least some of the wind direction and moisture sensors at the RWIS sites were malfunctioning. Because of the limitations of having just one year of storm events, a statistically reliable statement could not be made about ranking the three vendors. However, it was observed that there was a tendency to over-predict certain conditions. The storage and retrieval system limited the ability to evaluate the prediction of the timing and occurrence of storm events. Opinions by field personnel on the formats of the forecasts varied but were generally very favorable toward SSI. Some metrics that were identified to be key elements to evaluate forecast accuracy prior to the study and later confirmed during interviews with field personnel were not archived or the sensors were providing erroneous ground truth. Based on field observations, the temperature sensors were reporting very accurately at and around the freezing point.

Project Results

This report contains analysis that substantiates the problems with the data, analysis of the available data to compare the forecasts of the vendors and recommendations of procedures for monitoring sensor performance, data storage and retrieval, and items to consider in contract negotiations.

Report Information

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