Ice Sensor and Warning System

NRITS 2015
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Background

- Section of TH 12 near Dassel-Cokato High School routinely ices up from snow blowing onto the road
Background

- MnDOT District 8 plows this section of roadway out of Litchfield truck station, 17 miles away
- Snow blows from field to north
- Snow fence was not effective
Ice Sensors

- In-pavement sensor is placed in the wheel path at three locations
- Detects pavement surface state
  - Dry, Moist, Wet, Streaming Water, Frost, Snow, Ice
- Measures pavement temperature
Active Warning Signs

- Active signs flash while any sensor detects snow or ice
- Sends email alert to project stakeholders
  - Alerts will be used to monitor road conditions
  - Link to camera access via website
Pan-Tilt-Zoom (PTZ) Camera

- Camera can zoom in to see road conditions or to see the general road conditions.
Data Logger/Controller
Data Analysis/Calibration

Graph showing data analysis and calibration with ice height in millimeters (mm). The graph tracks sensor data from different times, indicating ice on the road and system on/off.
Winter 2014-2015
Data Compared to MnDOT’s MDSS
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