

Safer roads with less salt

How a road maintenance organization in Iowa, U.S. reduced their salt usage and reaped big benefits



Goal: Use less salt, maintain Levels of Service

Expanding road networks and the demand for high safety standards have led many road maintenance organizations to adopt salt in favor of sand and other options. However, environmental concerns and increasing use have prompted industry changes to balance salt treatment with customer demand.

The City of West Des Moines, Iowa, supports more than 150,000 daily commuters across 850 lane miles. The weather can vary from one end of the city to the other, and the department had been relying on general weather forecasts to guide winter road treatments. This

approach led to oversalting, and sometimes plowing before the salt had a chance to work.

The city is rising to the challenge by embracing new technology, staff training and best practices to empower their road maintenance crew. As Bret Hodne, Public Services Director, explains, "Operators and supervisors need a very good understanding about how deicer products work in conjunction with pavement, temperatures, storm conditions and application rates. They're out there in the field operating the equipment: We give them discretion to utilize the tools they have."

The city needed local weather insights across the road network to help them optimize salt usage, all while keeping the roads safe.

The client:

City of West Des Moines, Iowa, U.S.

Vaisala provided:

Vaisala Mobile Detector MD30

Solution: Real-time data across the network

The City of West Des Moines installed a Vaisala Mobile Detector MD30 onto the front of one of their snowplows to get real-time data on weather and road conditions. The MD30 tracks data including surface status, temperature and friction as well as air conditions. Front-facing video provides images of the road as the trucks complete their routes. Through an in-cab cell phone, the device displays weather parameters and provides recommended treatment to help operators make accurate treatment decisions.

After seeing how effective the MD30 is, the city quickly installed the solution on several trucks and integrated the data into their network, complementing their fixed road weather information systems. As the maintenance vehicles travel their routes, the MD30s record data and video which is later uploaded to the city's network.

The solution made an immediate impact on the city's winter road maintenance strategy, reinforcing their team-focused approach.

As Bret explained, “The supervisor has the ability to go back after the storm and review the data and road imagery to assist with future operational strategies based upon performance measurements. I am excited to have a tool like this in the operator’s hands that’s going to give us that ability to really take a look at when, how much, and where we’re spreading salt and other deicer chemicals in the future.”

**Results: Less salt,
greater insight and
consistent service**

Integrating the MD30s into the city’s network has given them a highly advanced road maintenance strategy that gives both operators and supervisors the ability to maintain the roads proactively, using the right material where and when it’s needed. Real-time, accurate measurements prevent

oversalting while local weather data gives them the insight they need to see how the weather is affecting the roads across the network.

“Now we can adjust on-the-move with storm conditions changing and get that word out. Employees being trained can know when those application rates may need to be adjusted,” said Bret.

The proof is in the results, and West Des Moines is confidently expanding the solution along with their growing city. “We’re taking real-time road information and road frictions readings into the operators world,” Bret added. “We have been reducing our overall salt output by over 30%. And I think with more of the MD30 units and more of this training, we’re pushing to get to 35% to 40% while maintaining the same Levels of Service.”

“There’s no more guesswork. Decisions are now being made on real-time data. To be able to measure road friction along with surface state and other things is taking us into a new era, and is by far the greatest technological advancement we’ve seen in the industry in a long time, if not ever.”

Bret Hodne
*Public Services Director,
City of West Des Moines*

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