Paul Bridge
Sales Manager
Vaisala
Boulder CO, USA

Helping the Windy City prepare for snow

Revolutionary non-intrusive road sensor package from Vaisala

"Chicago is known for its changeable weather, but one thing is certain: it snows in the winter," says Richard M. Daley, Mayor of the City of Chicago. In fact, Chicago receives an average of 39 inches of snow each winter and it's up to the Snow Command Center, under the jurisdiction of the Department of Streets and Sanitation, to keep Chicago's streets free of ice and snow during inclement winter weather. When such weather nears Chicago, the city dispatches its fleet of salt spreaders/plows to the main arterial streets which are divided into 261 routes.

Quick installation, low costs

The City of Chicago utilizes a state-of-the-art Command Center to help manage its fleet, with access to cameras, radar, Global Positioning Satellite (GPS) and road weather sensors. Traditionally the City has relied upon pavement weather data from a network of embedded sensors in various key locations. However, these had proved expensive to both install and maintain, so the city was keen to try alternatives. Vaisala's non-intrusive pavement sensor package proved to be the solution the City was looking for. "Not only do the Vaisala sensors provide us with the data we need in a timely fashion, but they were installed in a fraction of the time and cost of traditional sensors," says Bob Richardson, Deputy Commissioner for the City of Chicago.

The sensors have been deployed at key locations in Chicago, mainly on bridge decks, which have a tendency to freeze well before surrounding roads. By utilizing existing light columns, the sensors were installed within four hours at each of the current four locations across the city.

It even measures friction

For the highway maintenance operator, committed to preventing snow and ice from endangering safe passage, the spectroscopic measuring principle employed by the Vaisala Remote Road Surface State Sensor DSC111 delivers a substantial improvement in the type of data previously gleaned from Road Weather Information Systems (RWIS). Because the sensor uniquely measures water, black ice and white ice (hoar frost) independently of each other, it is now possible to measure the reduction in surface friction on the highway, resulting from adverse weather. For the first time the highway maintainer can now determine how slippery the road surface is, as well as measure its temperature and state.

"Being able to measure the friction of our roads helps us to measure the success of our winter operations," says Michael J. Picardi, Commissioner for the City of Chicago, "We can provide our residents and customers with objective performance indicators."

This is a great example of how Vaisala's non-intrusive sensor solutions are revolutionizing the traditional idea of Road Weather Information Systems. In the past, it was both disruptive and cost prohibitive for many towns and cities to obtain the critical road weather information they need. However, now Vaisala can provide a cost-effective solution to cities both big and small. ■

Photo courtesy of City of Chicago.

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