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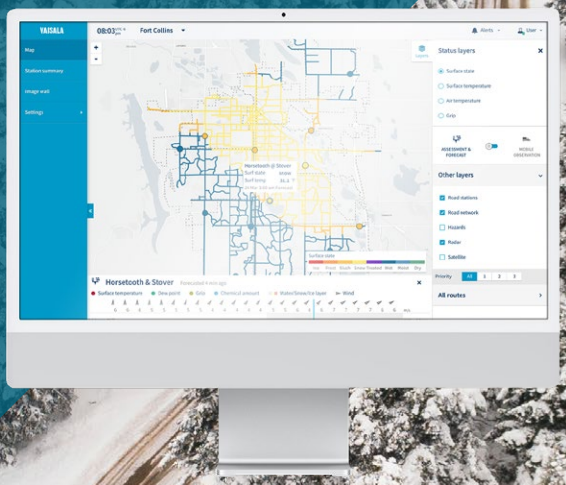
Wx Road Insights

An operational approach to road maintenance Data-as-a-Service and the new road to safety



Road maintenance agencies around the world share a simple but elusive goal: ***to keep roads safe.***

This is both a societal and an economic priority, since ensuring public safety and the smooth movement of people, goods, and services impacts many stakeholders in many ways.

Today, agencies often rely on local media, national weather services, and other forecast sources to plan and react to winter events. Although some agencies also purchase weather stations (often with inconsistently available government grants) these don't always provide a sufficient level of detail or reliability to optimize road maintenance operations.

As a result, agencies struggle to turn forecast and observation data into *actionable road-level insights* that can guide better decision-making. Many are seeking better data that can substantially change and improve their road maintenance practices.

Typical road maintenance approaches

Agencies typically manage road maintenance using one of three approaches.

1	**Forecast approach**	Uses local media and/or government weather services to anticipate weather events and plan ahead. Can lack certainty and precision, and may not include road surface data.
2	**Observation approach**	Uses human or technological observation to track evolving conditions throughout a network, often providing alerting when critical thresholds are exceeded.
3	**Operational approach** (ideal)	Integrates forecast and real-time observational insights for more detailed, reliable, and actionable road network data.

For most organizations, progressing from a forecast to an observation or operational approach requires funding, technology, and new practices. This modernization journey can become burdensome or costly, especially in today's budget-sensitive environments.

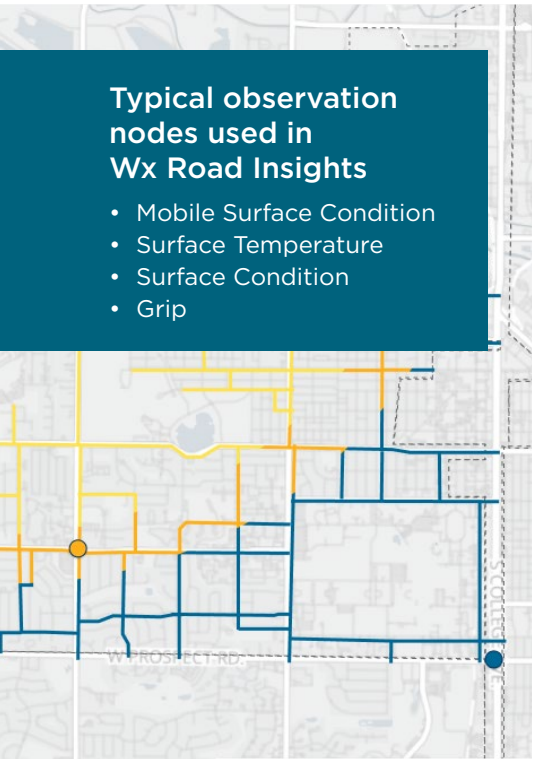
A new model: Vaisala Wx Road Insights

Not everyone wants to (or can) manage a modern road network maintenance solution on their own. Because of this, Vaisala has created Wx Road Insights, a Data-as-a-Service (DaaS) framework that minimizes agencies' infrastructure responsibilities while providing access to data they need to support decision-making.

Wx Road Insights means that Vaisala retains ownership and lifecycle management of the observation sensor network. Subscribing to a fixed monthly or annual fee, road agencies access continuous data from the measurement points — without the burden of ownership and maintenance.

Like many DaaS models, Wx Road Insights creates a continuous, mutually beneficial partnership that leverages each partner's strengths.

Vaisala	Customer
Owns, operates, and maintains sensors	Chooses from an "a la carte" menu of sensing functions
Owns data and manages accessibility	Supplies infrastructure, including power and mountings
Provides visualization/UI with each observation node	Subscribes to one or more observation nodes (sensing locations)
Provides consistent, standardized terms over 3 to 5 years	Adopts predictable, annual subscription-based operating costs



Typical observation nodes used in Wx Road Insights

- Mobile Surface Condition
- Surface Temperature
- Surface Condition
- Grip

Customers will receive access to Vaisala's Wx Horizon weather impact visualization. An enhanced subscription gives further access to network-wide assessment and forecast information. This is especially helpful for smaller agency teams or those with complicated road network characteristics.

Responsive to modern needs

From the customer perspective, a DaaS framework creates several notable benefits:

- Improves data quality and reliability
- Simplifies operations
- Puts Vaisala experts in charge of maintenance
- Accelerates digital transformation and modernization
- Provides budget consistency
- Avoids large bid processes and hardware procurements

Further nodes are in development, and customers can freely adjust or scale their Wx Road Insights deployment just like they can with other Vaisala solutions.

Find out more at vaisala.com/wintermaintenance.

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Case study:
McHenry County Division of Transportation, Illinois

McHenry County, near Chicago, sees almost 40 inches of snowfall each year and has a mix of high-traffic suburban and rural roadways. The region is bisected by a high-use interstate highway, and driving speeds are typically high. These and other factors mean that the McHenry County Division of Transportation (MCDOT) must monitor a large network of heterogeneous road types while reacting to fast-changing winter weather conditions influenced by nearby Lake Michigan.

The MCDOT previously owned several fixed Road Weather Information System (RWIS) stations, which produced useful data but required substantial investment and maintenance. As those stations neared the end of their service lives, the MCDOT looked to Vaisala for a DaaS solution that could provide consistent performance and value well into the future.

Vaisala provided a Data as a Service program, replacing the RWIS stations and delivering data to the DOT with improved uptime and availability. The DOT also gained a globally recognized partner to troubleshoot, strategize, and scale as needed.

Since then, the DOT has:

- Improved its liquid and salt application practices
- Effectively leveraged grip ratings and optical data
- Efficiently adjusted material mixtures to suit conditions, protect local aquifers and habitats, and preserve resources

DaaS has come to road maintenance

Mother Nature will always challenge us, but Vaisala Wx Road Insights gives agencies certainty and simplicity when they need them most. It is a modern, flexible solution that is responsive to today's challenges — and it's available to you right now.

"Last winter, we went with Vaisala's DaaS program, and it took out a lot of stress. It was nice to know the systems were up and running at all times."

Ed Markison
Maintenance Superintendent, McHenry County Division of Transportation

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