

Route Specific Forecast Thermal Maps – The devil is in the detail.



*How do you know how the road surface is behaving, in between your weather stations? The key to successful treatment decision making is knowing **If** ice will form, **When** it will form, **Where** it will form. This crucial information is provided by Vaisala.*

Varied winter landscapes

Road surface temperatures can vary by over 10 degrees Celsius across a county even when nearly uniform weather conditions occur across the whole of the road network. Local differences in topography, land use, surface construction materials and sky-view factor can lead to certain stretches of highway being more or less at risk of ice formation than others. However, these variations follow a pattern that can be identified, quantified and predicted. As such it is possible for efficiency gains and cost savings to be made by targeting resources onto your network areas most at risk.

Evolution and innovation

Vaisala has over 20 years experience in the provision and development of our **Thermal Mapping** service, which identifies the background variation in road surface temperatures with observed data points every few metres. This is then used as the backbone to Vaisala's Verified Route Based Thermal Maps. These are driven by your chosen forecast providers' models and forecast giving you total flexibility in your future forecast provision. **Route Specific Forecast Thermal Maps** then enable you to pinpoint your operations to deliver timely, cost effective service to the public.

Summary

- Road surface temperatures can vary by over 10 degrees Celsius across a county highway network.
- Thermal Mapping is used as the backbone to Vaisala's Verified Route Based Thermal Maps.
- Route Specific Forecast Thermal Maps enable you to pinpoint operations to ensure you are able to deliver timely cost effective operations.
- Unique TimeStep Thermal Maps enable time specific operations to be planned.
- Vaisala route design delivers scope for selective network treatment.
- Route design expertise is now being expanded to deliver optimisation to non-winter applications.

Timing is essential

Vaisala's unique **TimeStep Thermal Maps** deliver an hour-by-hour representation of the Forecast Thermal Map, and identify expected changing temperature patterns of a road. TimeStep expands on traditional Thermal Maps to display at what time individual roads will reach a critical state. TimeStep enables the user to step through the forecast for the forthcoming night and to observe the development of the highway surface temperature profile map across the entire **Thermally Mapped** network, climatic domain, or individual salting route.

Tailored treatment – Route by Route

Why treat the whole network, when only certain sections will freeze? Treatment routes can be designed with the information provided by Thermal Mapping in mind - grouping colder sections of road together by route. This offers considerable scope for Selective Network Treatment.

On marginal nights when only the coldest part of the network is at risk, these pre-defined cold routes can be treated, leaving the warmer routes on stand-by, leading to both monetary and environmental benefits.

Delivering the potential

Maximum flexibility for viewing this information is provided by Vaisala's range of display software, which allows information to be accessed

by multiple users, either through dedicated workstations or over the internet. The way the data is displayed is designed specifically to help the user have the confidence to mobilise individual routes on the basis of their forecast minimum temperatures, positively impacting on costs and efficiency.

Knowledge is power

Knowledge at your fingertips. Vaisala's systems help you to interpret your forecasts. By enabling you to consider routes in more detail, on an individual basis the potential monetary savings are huge. Combine this with being able to time your operations more accurately, in advance of adverse weather; you are on to a winner!

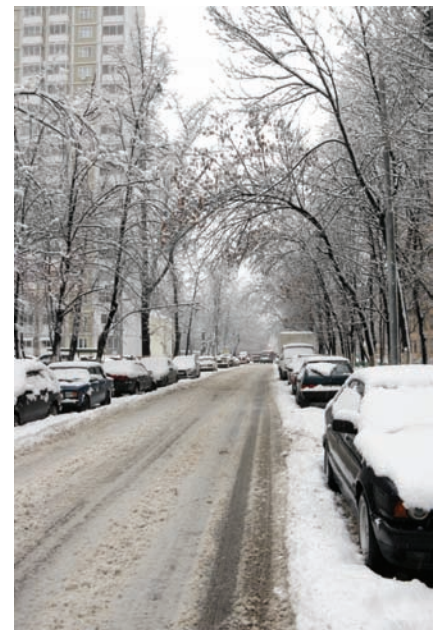
Reviewing the situation – Vaisala Consultancy

By examining and reviewing current routes and operational procedures, Vaisala Consultancy will investigate the possibilities of introducing variable vehicle sizes, spread rates and widths, treatment times and other treatment criteria.

The collaborative study provides information regarding proposed route numbers under the different scenarios. These proposals will give you a more detailed picture of the capacity for route reduction and re-organisation within your area.

Taking Route Optimization beyond winter

Vaisala has a team of experts with a long track record of fulfilling many route optimizations contracts over the years. This expertise and competency is now available for route optimization work away from the field of winter maintenance. So if you have vehicles travelling pre-defined routes for whatever reason why not get in touch with our team to see how we can use our expertise to deliver efficiencies in your business operations.



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For more information, visit www.vaisala.com or contact us at sales@vaisala.com

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