

National Highways keep UK roads safe in winter

When wintry conditions put road safety at risk, a solution developed and managed by Civica helps National Highways take the right action.

In wintry weather we take it for granted that the gritters will go out and make the motorways and trunk roads safe to drive. But how many of us stop and think about how the winter maintenance teams know when to send the gritters out, how much salt to load up, and which routes need gritting?

Keeping drivers on the move

All decisions are based on data about weather conditions, road surface temperatures and other meteorological parameters. National Highways, which operates England's strategic road network gritter fleet, uses a solution developed and managed by Civica to manage 535 specialist vehicles, 1,300 drivers, 127 depots, and 280,000 tonnes of salt.

Built by Civica, the Severe Weather Information Service (SWIS) brings together all the information England's winter maintenance community needs to make decisions about treating the roads.

Weather forecast data is submitted automatically to the SWIS back-end database several times a day from multiple sources. In parallel, a network of around 250 weather stations along 4,400 miles of roads sends real-time observational data.

Meteorologists working with local teams have securely controlled access to the SWIS web application to:

- Review the combined forecast and actual data
- Decide which roads to treat
- Create action plans based on pre-defined routes held in the system.

Each action plan includes the allocated gritter, the time it needs to go out, and the amount of salt it needs to take on board.

4,400

miles of road observed and managed



99%

application uptime



500+

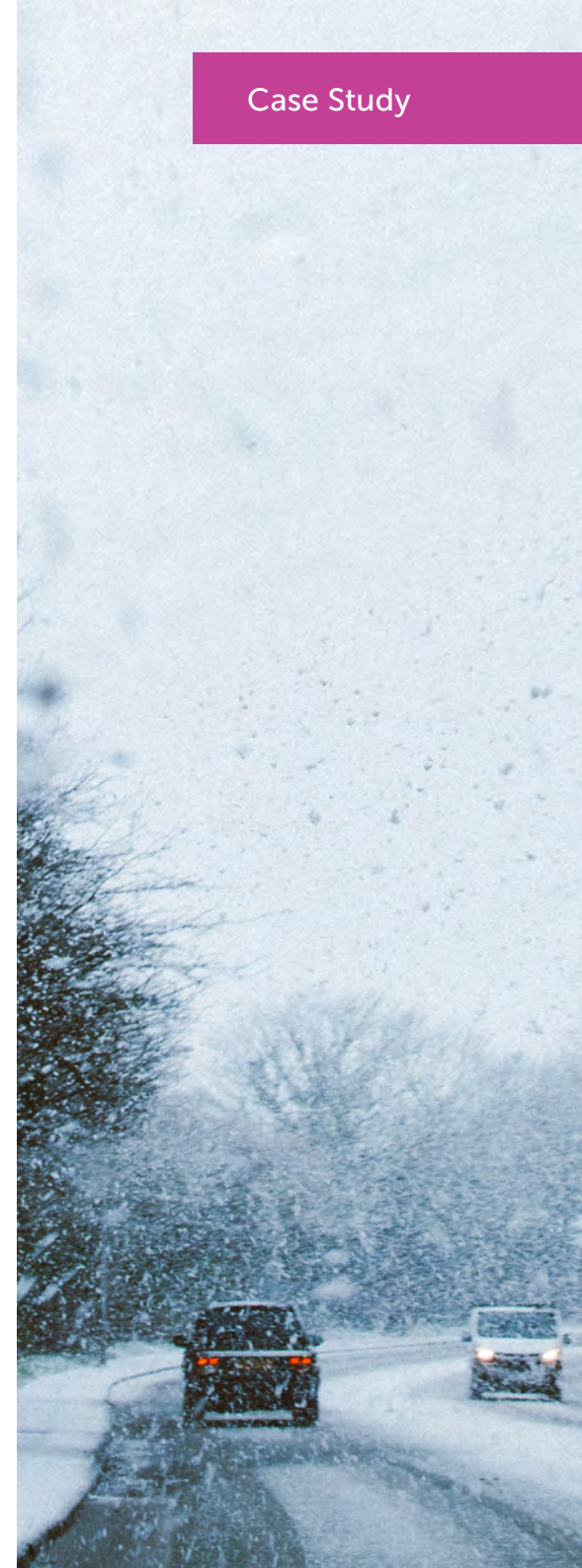
specialist vehicles managed

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James Cross
Weather Information Services
Project Sponsor,
National Highways

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Real-time tracking, comprehensive reporting

Each gritter is tracked in SWIS using data transmitted by its on-board GPS unit. This enables real-time mapping of every gritter in action. In the event of an issue such as a claim, or when National Highways wants detailed vehicle information, data held in SWIS helps resolution by showing, for example, the speed and direction of travel of the gritter at the time.

Following completion of all the gritting routes, the teams use SWIS to generate audit trails, including how far each vehicle has driven and the amount of salt used. The reports provide evidence that the roads in question have been treated and show the effectiveness of the work done. They also underpin fleet management and maintenance.

James Cross, Weather Information Services Project Sponsor at National Highways says, "SWIS stores a huge amount of data and is our main solution for severe weather business continuity reporting. It ingests all our weather forecasting information, weather station observations and salt stocks. It's an essential, fully integrated tool that supports our severe weather decision-makers."

Regulatory requirements mean that National Highways must retain SWIS data for a minimum of 7 years to allow subsequent investigation or verification of any matters that may arise.

Constant monitoring, ongoing enhancements

To keep the critical SWIS system up and running, Civica provided a managed service with round-the-clock coverage and monitoring.

"We achieve on average **99.98%** solution availability. Relying on Civica for 24/7 technical support gives us the confidence that SWIS is a robust platform, where any issues are resolved in an incredibly timely manner," says James Cross.

Civica continues to enhance the SWIS service with new features and functionality for users, including:

- Better vehicle management capability incorporating more detailed data from the vehicles' on-board systems
- Modernised look and feel for the web front-end to make it even easier to use
- Additional reporting, including better salt stock monitoring.

Civica additionally makes operational improvements to ensure the smooth running of SWIS. A recent change was the transfer of the back-end database from a bespoke solution to a Microsoft-supported Database as a Service that became available in Microsoft Azure which is easier to support and upgrade.

Collaboration and shared knowledge deliver results

Key members of the Civica team that built SWIS continue to deliver and manage the service some nine years on.

National Highways values the expertise of those individuals, their insights into the needs and priorities of the winter maintenance community, and the shared knowledge that's been built up over time.

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Outcomes

- Effective data-driven decision-making for keeping England's trunk roads safe in winter
- Efficient management of a nationwide fleet of 500+ specialist vehicles
- Scalable database supports daily data additions and long-term regulatory-compliant storage
- Round-the-clock monitoring ensures critical system availability
- Ongoing collaboration ensures SWIS continues to meet the needs of England's strategic road network winter maintenance community



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