INNOVATION, SUSTAINABILITY + DIGITAL IN PRACTICE

ISDIP

ISDIP 110	Leveraging Live Weather Data in Roading Contracts
Date	November 2025
Business Unit	Higgins
Project & Region	Road Surfacing Projects – All regions
ISC Themes	• Management and Governance • Using Resources • Emissions, Pollution and Waste • Ecology • People and Place • Innovation

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1 What Happened?

Higgins identified a growing challenge in managing resealing and maintenance contracts, particularly with the shift towards emulsion-based products that are more sensitive to weather conditions. Decision-making in the field was often hampered by a lack of precise, real-time weather data, leading to increased risk, costly rework, and inefficient use of resources. To address these issues, **Steve Booth (Higgins)** led the introduction of the MetService MetConnect platform across the business. MetConnect is a tailored weather information portal and provides a range of weather modules, including weather warnings, weather maps, forecasts, high resolution rain radar and historic and live weather observations. From a road maintenance perspective, the entire state highway network is modelled to deliver forecast road surface temperatures, road states (eg wet, damp, dry, icy, etc) and a friction coefficient (slipperiness).

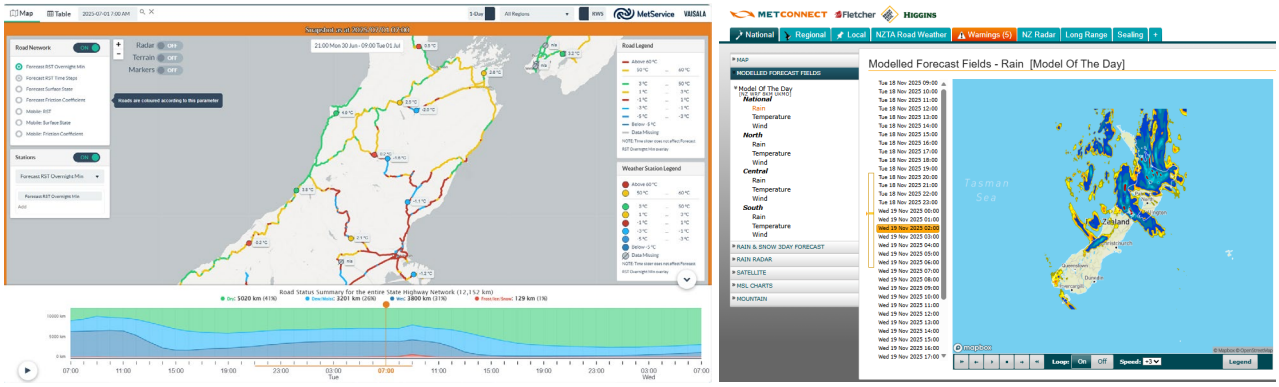

Image: MetConnect platform showing forecast road temperatures and road states along with rain modelling

To add further value, MetService has worked with us to design a Higgins sealing index that uses a red, amber and green traffic light matrix to indicate the likely success of a road sealing job, based on industry specifications for the application of various sealing products and application rates.
With an imminent move to wider use of (water-based) emulsions it was crucial this science-based threat risk matrix approach was adopted in order to maximise the success of emulsion application jobs.

We have 100 MetConnect licences, with nearly 70 users currently actively making more informed decisions about when and where to deploy crews, significantly reducing the risk of weather-related delays and re-work.

Variables used in the calculation of the Higgins Sealing Index include weather conditions (rainfall, air temperature, relative humidity), date, time, location, product application rate, and product type. We are combining meteorological information and road industry standards and knowhow to determine the correct sealing risk category. A carefully considered combination of meteorological science, product knowledge and road maintenance experience.

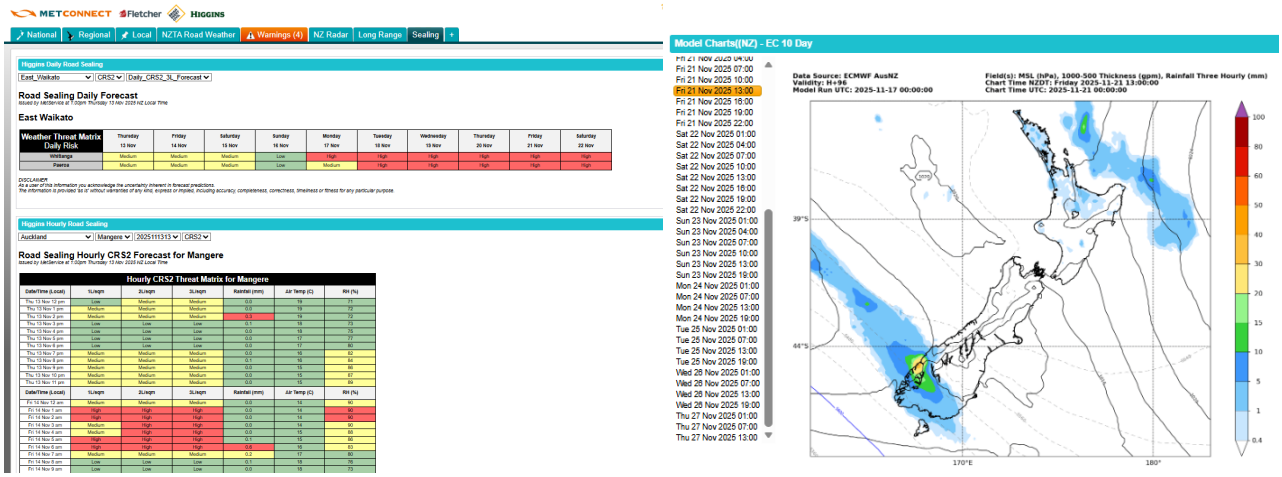

Image: Showing the Higgins sealing index along with long range rain forecasts.

2 What Are We Doing Differently?

With MetConnect, Higgins has fundamentally changed its approach to planning and delivering road maintenance and resealing work:

- **Proactive Decision-Making:** Teams can now access live weather data and site-specific forecasts up to seven days in advance, enabling better planning and reducing last-minute cancellations.
- **Real-Time Field Support:** The platform's Sealing Index tab allows crews to check the state of the road before starting work, helping to avoid wasted effort and minimising the risk of product runoff or environmental incidents.
- **Resource Optimisation:** By shifting crews to drier sections of road as needed, Higgins maximises productivity and reduces downtime, saving significant costs (up to $20,000 per hour for combined sealing crews).
- **Risk Mitigation:** Improved transparency and data-driven decisions mean fewer instances of rework, less waste of materials and fuel, and lower emissions.
- **Environmental and Compliance Benefits:** The system helps prevent product runoff into waterways and supports compliance with environmental standards.

- **Data-Driven Insights:** Historical weather and work data can be reviewed for up to several years, supporting forensic analysis, pricing, and contract planning.
- **Innovation and Collaboration:** The platform is tailored to the specific needs of roading, integrates with Waka Kotahi data, and is recognised as a digital innovation within the industry.

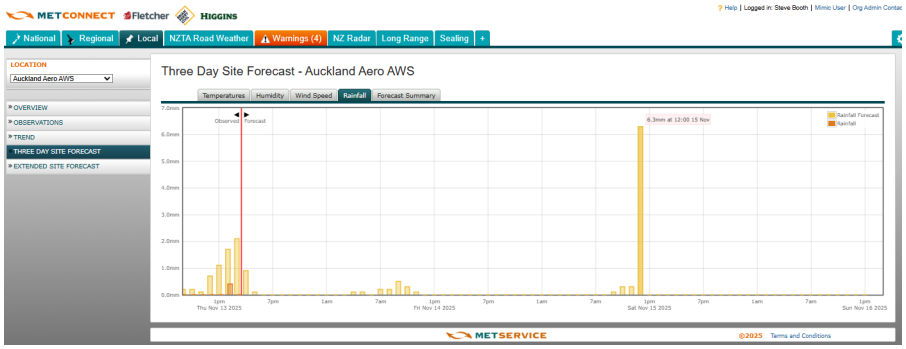

Image: 3 Day site specific forecasts

Feedback from frontline teams has been positive, with real-world examples (such as in Palmerston North) demonstrating how MetConnect enabled crews to safely complete work within narrow weather windows, helping with decision making process while avoiding costly delays and rework.
This collaborative approach moves beyond generic weather reports to provide precise, data-driven intelligence, enabling construction professionals to make informed decisions, reduce downtime, and mitigate risks associated with adverse weather conditions.

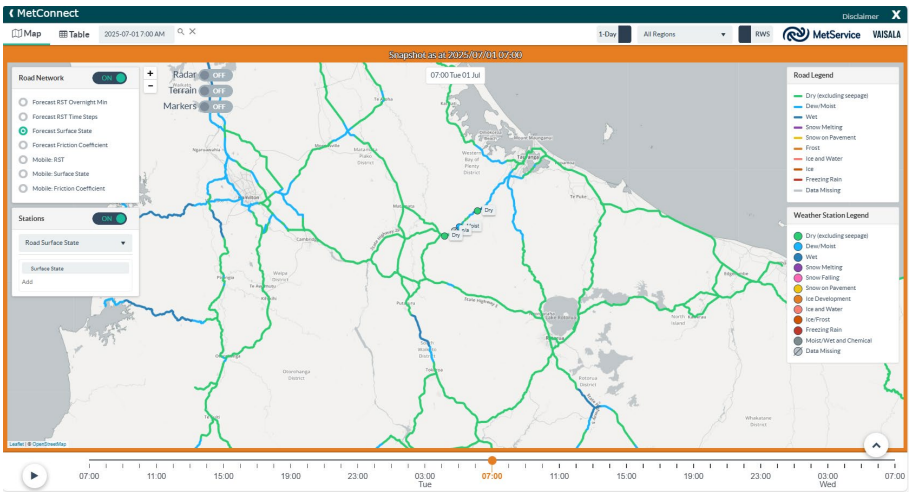

Image: Road state forecasts in the Waikato and BOP.

3 More Information

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