

New Zealand

Monitoring pavement performance



TYPE OF TOOL
Data and digital initiatives



MAIN SECTOR
Transport



INFRASTRUCTURE GOVERNANCE PILLARS
Asset performance throughout its life

In a nutshell



OBJECTIVE: The New Zealand Transport Agency collects pavement performance data to understand how state highway surfaces perform and predict how pavements will perform in future.



Agency in charge
New Zealand Transport Agency



Levels of government
National



Year of implementation
2000



Current status
Inactive

Overview

Maintaining high-quality infrastructure is challenging for numerous reasons, including harsh weather, unexpected utilisation, and inconsistent wear and tear. Optimising maintenance scheduling ahead of asset failure or breakdowns extends the life of the asset and limits its deterioration. Predictive maintenance leverages available data and new computing methods to send warnings in case of near failure. By providing tools to better identify and target maintenance, predictive maintenance of infrastructure implies a more efficient allocation of the available budget. Since 2000, New Zealand's Long Term Pavement Performance programme (LTPP) has been informing how state highway surfaces perform. To enable a better understanding of how roads will perform in the future, the New Zealand Transport Agency (NZTA) uses the Deighton's Total Infrastructure Management System (DTIMS) to predict how much surfacing is going to need renewing, how much pavement length needs strengthening over the next 10 years and the funding implications, for state highway plans. Covering 139 sites (71 on state highways, 68 on local roads), the LTPP survey data collection project provides detailed pavement performance information on roads with various characteristics. The NZTA collects this information – including on traffic, construction, climatic environment, age and condition – by accurately measuring carefully selected sections of road each year. These survey results provide accurate, repeatable measures of rutting, roughness, texture and surface condition. This data is fed into the DTIMS deterioration models to improve their accuracy in predicting the future performance of the pavement. More specifically, the models are used to predict when the road becomes unsafe and when maintenance is most economical, because too early intervention wastes money and maintenance delayed too long becomes more expensive. The NZTA also uses the LTPP data to ensure the SCRIM+ (Sideway-force Coefficient Routine Investigation Machine) vehicle provides reliable network-wide data of pavement condition, mainly on state highways. SCRIM+ collects data on range of condition aspects, which allows the NZTA to respond to any arising maintenance issues and helps ensure road users continue to travel safely.

REFERENCES:

- New Zealand Transport Agency, *Monitoring pavement performance*, <https://www.nzta.govt.nz/roads-and-rail/road-composition/monitoring-pavement-performance/>