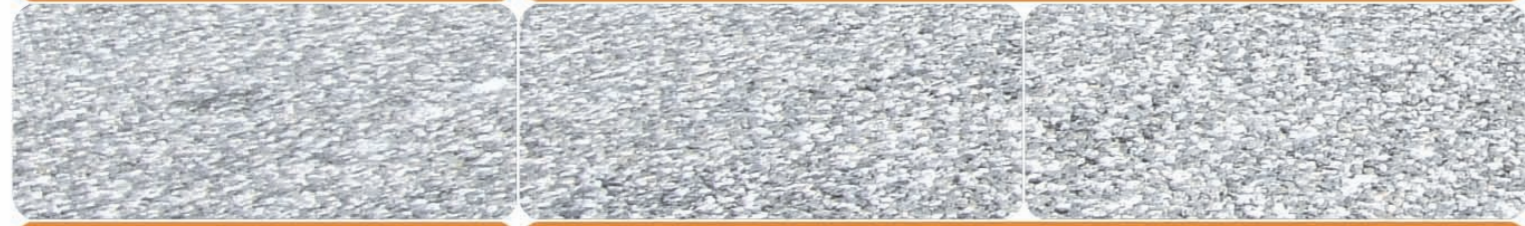




Years of Programme	Value of Data	% of Potential
1 - 3	limited except for equipment calibration and general understanding of pavement behaviour	~ 30%
3 - 5	model development based on snapshot method	50 - 60%
5 - 10	time-based model development failure analysis (when do pavements reach failure?) advanced research into specific areas e.g. performance of specific material types (e.g. porous asphalt) additional data use e.g. equipment accreditation	90 - 100%



Status of Other LTPP Programmes	Australia: data collected for 12 years; programme continues
	South Africa: data collected for 14 years; programme continues
	United States: part of Strategic Highway Research Program (SHRP) data collected for 16 years; programme continues



More Information	More information and publications can be found on: the RIMS website: ( <a href="http://www.rims.org.nz">www.rims.org.nz</a> ) Transit New Zealand ( <a href="http://www.transit.govt.nz">www.transit.govt.nz</a> ) Land Transport NZ ( <a href="http://www.ltsa.govt.nz">www.ltsa.govt.nz</a> )
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New Zealand's Long Term Pavement Performance (LTPP) Programme



# New Zealand's Long Term Pavement Performance (LTTP) Programme

New Zealand engineers who have adopted the dTIMS model, use the World Bank models as a starting point for predicting pavement performance. However, these models are generic and need refinement to local conditions e.g. construction techniques, geology, and weather, all of which impact on the life and maintenance of roads. A long-term pavement performance (LTTP) programme, started in 2000 on the State Highways, was expanded in 2003 by adding 82 LTTP sites in 21 local authority areas.



## What Data is Collected?

The data collected for the LTTP programme include most of the usual condition indicators that are used to describe the health of pavements. These include road roughness, wheel track rutting, the texture of the surface and various distresses assessed by visual inspection (e.g. cracking).



## Why is this Data Collected?

Data collected as part of this programme are used to calibrate models, e.g. HDM/dTIMS, or to develop new model forms which are then used to predict:

- when the road becomes unsafe
- when maintenance is most economical, because too early intervention wastes money and maintenance delayed too long becomes more expensive.



## How is the Data-Collection Managed?

A specialist data collections company (R & D Consultants) undertakes the data collection. R & D has been appointed on both the Transit and Land Transport New Zealand Contracts based on a performance specified contract. For this contract the accuracy of the measurements were specified and the contractor had to nominate the equipment and methodology they will use during the surveys. Transit New Zealand manages their contract, whilst MWH New Zealand manages the Land Transport New Zealand contract. MWH is also responsible for the data QA and producing the data CD's for both these programmes.



## Other Benefits of the Programme

Apart from the objectives mentioned above, there have already been uses of the data and benefits realised from this project that exceed the original scope. Some examples include:

- Research is being conducted into specific areas. Some examples:
  - pavement strength variation over time
  - new test methods for determining pavement strength (Seismic wave tests)
- Some local authorities have already used data in the calibration of equipment.
- The LTTP programme will be come part of an equipment accreditation system

## Progress Made

- Seven years of survey data is available for use from Transit while there are four years worth of local authority data
- The data collection method has been confirmed as valid and successful, in terms of:
  - correct methodology
  - accuracy and repeatability
- Although this is a very early stage in the programme, results are being used in the development of pavement models
- Two Land Transport New Zealand (LTNZ) Research Reports have been completed:
  - Henning, T.F.P., Costello, S.B, Watson, T.G. 2006. A review of the HDM/dTIMS pavement models based on calibration site data (in publication)
  - Henning, T.F.P., Alabaster D., Roux, D.C. Benchmarking pavement performance between Transit's LTTP and CAPTIF programmes (draft)
- Special projects for the Road Information Management Steering Group (RIMS) initiative:
  - Urban Roads Condition Study
  - Conceptual development of pavement models for low volume roads

The 21 councils contributing to the programme are: Auckland, Christchurch, Dunedin, Grey, Hastings, Hutt, Manakau, Marlborough, Napier, New Plymouth, Papakura, Queens-town-Lakes, Southland, Tasmán, Thames-Coromandel, Waitaki, Wanganui, Western Bay of Plenty, Whangarei and Wellington

