

Recent Reforms in Asset Management in New Zealand

Introduction

This presentation covers some of the changes to asset management following a comprehensive review of road maintenance in New Zealand. The review suggested increased efficiency could be realised by changing business models, procurement, asset management and critically examining levels of service.

About New Zealand

New Zealand is a small island state in the south of the Pacific Ocean. Population is about 4.6 million. The economy is significantly influenced by agriculture, forestry and fishing and the road network is a significant enabler of that activity. The New Zealand network comprises 31,000 km of unsealed pavement and 63,000km of sealed pavement. About 20% of the network is urban.

Responsibility for the road network is split between central government and local government.

- State Highways provide the main connections between population centres and travel and freight destinations and are managed by a business unit of the New Zealand Transport Agency.
- Local authorities provide for local travel – transport corridors within cities and the distributor network that connects to the individual properties where people live and work.

Land transport is funded through the National Land Transport Fund which is built up primarily from taxes on fuel and road users. The fund pays the full cost of State Highways and subsidises local roads at varying rates. Overall the National Land Transport Fund pays about half of the cost of local roads. The balance of the local road cost is funded through 'rates' (property taxes).

Drivers for Change

Pressure for change built following the global financial crisis around 2008. In 2011 the Government established the Road Maintenance Task Force to advise how road maintenance could be made more effective. The task force included representatives from all agencies involved in road maintenance – consulting engineers, contractors, local government and the New Zealand Transport Agency.

When it reported back in 2012 the taskforce noted pressures on costs included:

- Inflation forcing up costs
- Changes in supply costs and foreign exchange affecting bitumen and fuel
- Increasing traffic, particularly heavy vehicles
- Increasing levels of service particularly for safety improvements
- Increasing sophistication in signs, marking and traveller information

It identified four avenues for improvement:

- Business models – appropriate allocation of responsibility, bundling of work and collaboration to reduce the diversity of practice
- Procurement – the way that services are specified and purchased
- Differentiation of service levels
- Better asset management practices.

Roading Efficiency Group

The recommendations of the Road Maintenance Task Force were to be implemented by a cross-industry group designated the Roothing Efficiency Group. This group focused on three inter-related areas:

- A One Network Road Classification (ONRC) to standardise data and create a classification system to link the function of a road and the level of service
- Collaboration with the industry and between road controlling authorities to share information, staff and management practises.
- Best Practice Asset Management to share best practice planning and advice with road controlling authorities

One Network Classification

The aim of the classification system is to link the function of a road to its 'level of service'. The aim of the classification is to shift the focus from keeping assets in the best possible condition to building investment around 'customer outcomes'.

The Roading Efficiency Group has developed a draft set of measures for customer outcomes that cover:

- Safety
- Travel time reliability
- Value for money
- Amenity – primarily roughness
- Resilience – measuring how 'available' the network is and ability to cope with and recover from disruption
- Accessibility – Integration with other modes and ability to handle volume

All road controlling authorities have prepared their classifications and only a small number of these have yet to be finalised and approved. The road controlling authorities are now preparing transition plans to show how they will collect data to monitor customer outcomes and integrate that into existing data systems and management practices.

Business Models and Collaboration

The business unit that runs the State highway network has been developing a new form of contract for maintenance. In some regions the work has been bundled with local authority road maintenance.

The data is regarded as commercially sensitive but results look encouraging. Costs for State Highways seem to be declining. In the two regions where local authority work has been bundled with state highway work over recent years cost increases have been contained.

Changing Asset Management Planning

The big change in asset management is the shift from asset management to service management. Most agencies have not yet demonstrated the shift but a good illustration can be found in the documents prepared by the business unit that manages the State Highways:

- The ***State Highway Asset Management Plan*** provides a high level overview of the changes in service performance – for example increasing road safety, relieving congestion, and providing for high productivity motor vehicles.
- The ***State Highway Infrastructure Assets Management Plan*** describes the approach to prioritising and managing assets and outlines the maintenance and renewals strategies and programmes that deliver services, address risks, derive financial needs and pursue best value and least long term cost.
- A series of ***lifecycle asset management plans*** provide the detailed descriptions of assets, their condition, maintenance and renewal in terms of growth in demand, changes in level of service, legislative responsibilities, resilience and operational. Previously it was this content that drove demands for funding rather than allowing the need for funding to be considered in a wider management context.

The changes to the way asset management should be represented are not yet widely understood among road controlling authorities. Many asset management plans currently follow the traditional approach. In future the Transport Agency will be seeking plans that:

- Identify the most important long term trends that affect transport such as:
 - Changes of economic activity and land use (e.g. conversion of land to dairying, forestry, viticulture or tourism) and how that affects travel demand
 - Road safety outcomes and issues on the network
 - Ensuring access to important community facilities such as schools and hospitals
 - Keeping the transport network functioning under adverse weather conditions, around accidents or other events

- Identify the most important factors in management such as:
 - Major cost drivers
 - Standards of access for different locations
 - Access to resources such as gravel and bitumen
 - Contractor capability and market competition
 - Benchmark comparisons and efforts to increase efficiency

- Provide good data on assets and their condition and plans to maintain them.

Changes in practice

Practice is built on experience and results have to be proven successful before new ways are widely adopted. New Zealand is observing this in relation to rehabilitation of sealed pavement.:

For both unsealed and sealed pavements about half of the cost of maintaining a pavement is in renewal – adding metal to unsealed roads and resurfacing the sealed roads. Getting renewal activity right is critical to an effective and efficient maintenance programme.

It looks like rehabilitation of sealed pavements is being over-provided. This practice may have its origins in a Transport Agency research report that found a sample of state highway pavement sections lasted on average of 45 years with a range of $\pm 50\%$ – 30 to 70 years. This has been taken to mean that pavements should be renewed at an average rate of about 2%.

Many programmes have renewal rates below 2% and there is a widespread belief among practitioners that this means a ‘bow wave’ of renewals will emerge in the not too distant future. This belief encourages asset managers to promote rehabilitation and site inspections of potential rehabilitation sites often reveal that while the pavement has some failure, more selective and economical remedial treatment is possible.

This observation is backed by more recent Transport Agency research that suggested many pavements are being rehabilitated while considerable life remains in the pavement. Further, private sector research with falling weight data is suggesting that for many pavements the combination of subgrade strength and pavement loading is such that many pavements may last indefinitely.

The business group that runs the state highway network has taken a lead in controlling the rate of pavement renewal. All proposed treatments are reviewed by a group of experienced practitioners to assess whether renewal is fully justified. Results of their judgements are published in the Transport Agency annual report which shows rehabilitation quantities have fallen from 1.3% to 1% in 2013/14.

The example is now being followed by a number of local authorities who are also experimenting with peer review groups that challenge rehabilitation proposals. In one exceptional case a local authority has been encouraged, through challenge, to reduce its total budget by close to 30% primarily as a result of reviewing its rehabilitation programme.

Summary

A comprehensive review of road maintenance in New Zealand suggested several avenues where greater efficiency might be possible. There have been good results from changing contract incentive and bundling work on state highways and local roads. A significant change promoted by the review was to shift the focus of asset management toward service management with a unified classification system and standard measures for customer outcomes. While the initial results are encouraging the changes of practice will take time to embed.