



NZ TRANSPORT AGENCY
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NZ Transport Agency
Final Report - Asset Management Reviews
2013

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Executive Summary

1.1 Purpose of this report

This report provides a summary of the findings from the NZ Transport Agency's (the Transport Agency's) review of asset management planning in thirteen road controlling authorities. It should be noted that individual reviews were completed between January and December 2013 and some participants have made improvements to their processes since the time of their reviews.

The purpose of this exercise was to:

- provide an authoritative, independent view of the level of asset management capability in local government organisations and Highways & Network Operations Group (HNO);
- give agencies access to a robust, reliable and valuable assessment methodology to track changes in asset management practices over time, and;
- highlight areas of strength and weakness across the industry.

In making investment decisions, the activity/asset management plan is a key document. A well thought through and balanced AMP will give the Transport Agency confidence that an Approved Organisation is delivering value for money over the life of the asset. Separate reports have provided individual feedback to the authorities reviewed. This report provides an overview of the key findings of the reviews, provides guidance around the Transport Agency's expectations in relation to asset management, provides some examples of good practice and shares lessons learnt. Our methodology is explained in Appendix One.

1.2 Key findings

Generally, there was very good engagement with the review process. Most organisations made a good effort, which resulted in robust and useful discussion. The organisations who were engaged found the process more useful than those who saw it as a compliance exercise.

Collaboration is an area that is improving regionally, with many organisations seeking out opportunities for collaboration and smart delivery. Levels of service are well understood and all organisations were basing their maintenance programme on a network hierarchy.

Many organisations were trying innovative and new solutions and we saw examples of "sweating the assets". While we commend them for trying new ideas, very few were following up to review the impact of their initiatives. This is an important step, which provides useful insight and learnings for future decisions.

Common issues highlighted in our reviews related to:

- keeping the AMP documents current & relevant
- identification and management of critical assets
- the level of investment in renewals not aligning to depreciation being charged
- poor budgeting for operating & maintenance costs on new infrastructure
- quality and completeness of data
- monitoring the impacts of change initiatives

1.3 Some examples of good practice

Waipa District Council

- The AMP document itself is a good example of a plain English and easy to read document
- The roading team forms part of a wider strategic asset management group focussed on building asset management capability within Council. The roading team leads and demonstrates good asset management and provides support to others within the organisation.

Hastings District Council

- Very good asset management practices generally
- Took the initiative to request changes to the RAMM system, which will benefit all users
- Very good at keeping the Asset Management Plan current. By treating it as a live document, it is regularly used as a key reference point for staff.
- Has identified critical assets and tagged them in RAMM. Asset Management staff are using this information to guide the level of planning and preference given to assets.
- Measures the impact of its activities on the network

Western Bay of Plenty District Council

- Maintenance activities are procured through a performance based service contract delivered by an Opus and Downer supplier alliance known as “Inroads”. As a result of the reporting requirements of this contract, large volumes of data are available. The data, along with service delivery performance, is used as a planning tool to help determine the impact a change in levels of service is likely to have on the network.
- The tools and techniques used by Inroads are more advanced than those used by councils of similar size and complexity. This means that Council is able to defend its decisions to its community and stakeholders.

Tasman District Council

- Staff are very good at leading the debate around levels of service with their Council members.
- Have been trialling measures to reduce level of service costs, both in procurement and delivery.
- Good use of a priority matrix and survey results to help guide development of the programme.

Auckland Transport

- AT has a clear asset management improvement programme mapped out, which identifies clear milestones, responsibilities and resource requirements.
- Monitors growth well, and the Integrated Transport Plan gives effect to the requirements identified in the wider Auckland Plan.

New Plymouth District Council

- Actively scans the environment for potential demand changes and demonstrates a very good awareness of future transport needs

HNO Otago

- Actively looks for ways to sweat the asset, while monitoring trends as a result of this.

1.4 Explanation of Ratings

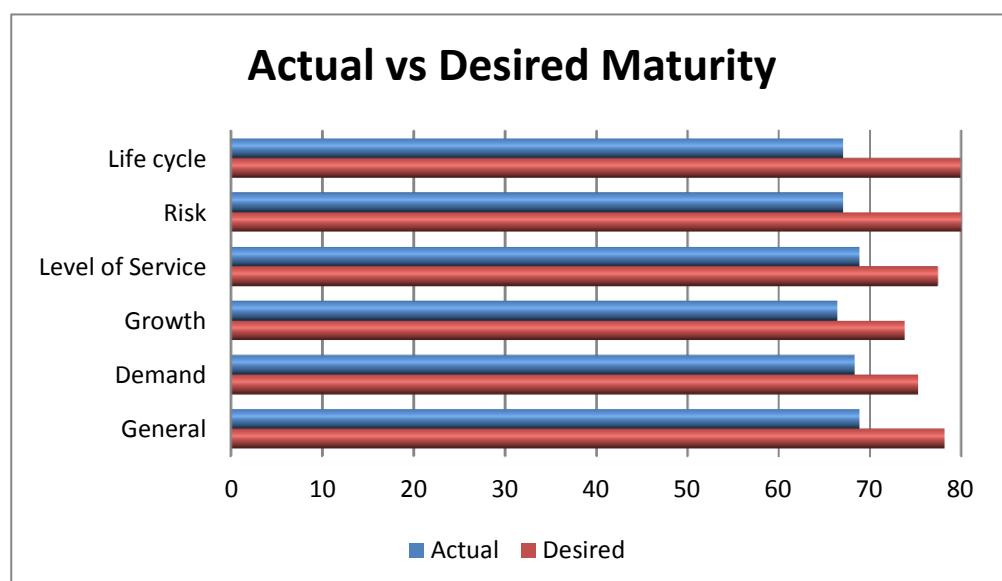
The assessment framework uses a scoring system developed from the framework presented in the International Infrastructure Management Manual (IIMM). The output from this assessment is a measure of an organisation's asset management "maturity" plotted on the scale shown below.

Aware 0-10	The Organisation is starting to learn about the importance of Asset Management
Minimum 11-40	The organisation is aware of the importance of Asset Management and is starting to apply this knowledge
Core 41-60	The organisation is developing its Asset Management activities and establishing them as business as usual
Intermediate 61-80	The organisation's Asset Management activities are fully effective and are being integrated throughout the business
Advanced 81-100	The organisation's Asset Management activities are fully integrated and are being continuously improved to deliver optimal whole of life value

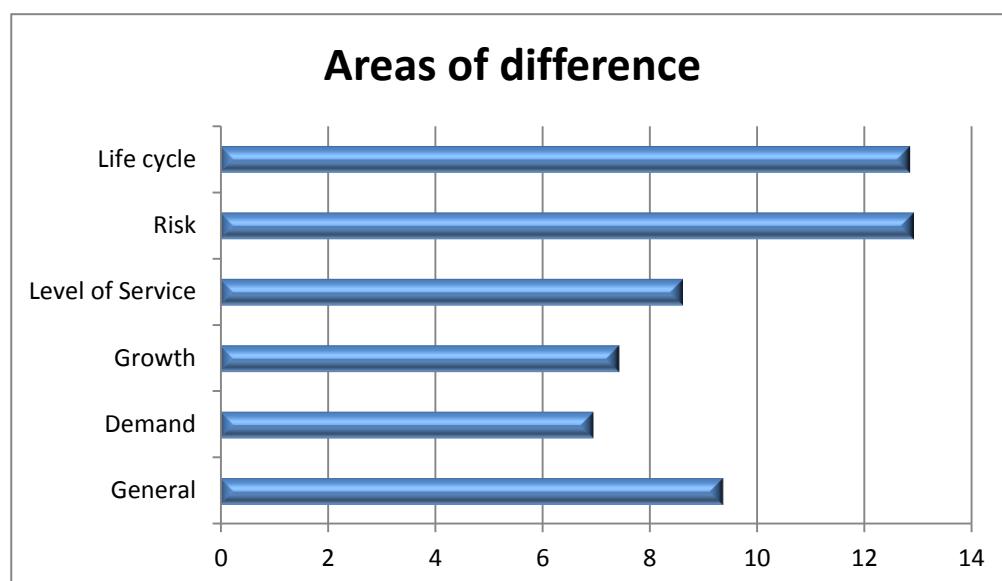
Summary of Findings

1.5 Summary of findings by category

The following graph shows the current asset management maturity and the desired level for the 13 organisations:



The graph below shows the average gap between current asset management maturity and the desired level for the 13 organisations:



1.6 Key themes emerging

The areas where there is the greatest gap between current ratings and targets are “lifecycle” and “risk”.

1. Lifecycle

- a. Collaboration seems to be improving regionally. There are some good examples of councils sweating assets, and we should all be learning from successes and failures. Collaboration is an important theme and most interviewees were seeking more opportunities.
- b. Many of the organisations reviewed had well developed pavement strategies, matching a network hierarchy.
- c. Most of the organisations reviewed were unable to demonstrate a sound process to identify and manage critical network assets. Many water industry organisations have effectively implemented a criticality review, resulting in more robust asset management. This improvement in the water industry may provide some useful guidance to Roading Asset Managers.
- d. In many organisations, we were concerned that the value of renewals was not keeping pace with the depreciation being charged to the roading asset.

2. Risk

- a. Organisations tended to have reasonably good risk management plans, yet there was little evidence of these being actively monitored, and no reporting on the actions to reduce risk.
- b. Data quality is still an issue for some of the larger organisations.
- c. Greater collaboration across Approved Organisations would be of benefit to all RAMM users. Hastings DC has submitted a list of improvements to RAMM, which have the potential to benefit many other users.

3. Levels of service

- a. Generally, levels of service are well understood and well managed.
- b. Roading asset managers at councils understand that they need to lead the debate around levels of service options, but are unsure how best to do this. Tasman DC appears to be one of the more effective organisations in leading that debate with councillors.

4. Growth

- a. Where investment has been made in new infrastructure, there is a tendency for road controlling authorities not to recognise the ongoing operational and maintenance costs in their budgets. While achievable in the short term, this is unsustainable longer term.
- b. Disposal of assets is considered to some degree, but is not a high priority focus.
- c. Councils are aware of aging population transport demand changes, but on the whole are not actively making investments or planning for it.

5. Demand

- a. The impact of logging trucks from the forestry industry is a common theme, and there are different ways of managing this. There could be an opportunity here to share ideas across councils.

6. General

- a. Keeping Asset Management Plans current is a challenge for many of the organisations reviewed. While AMPs are being formally reviewed periodically, changes in practice between revisions are not being updated into the documents. It is our experience that AMPs that are kept live are more useful and tend to drive the business. Hastings District Council's AMP is treated as a live document and is used by staff regularly to help guide their work.
- b. AMP documents are very long, and in some cases not being used effectively. Where they are being used effectively, they are well supported by up to date asset information, planning processes and closely linked to operational activities.
- c. Some councils are under greater pressure to reduce costs than others. There is also concern in the industry that short term cost efficiency solutions may result in longer term issues.
- d. During conversations with the councils, a recurring theme was the impact of rising standards such as temporary traffic management and safety requirements driving minimum costs up. The industry needs to closely monitor the impact on costs of these rising standards.
- e. Many of the organisations reviewed had been trying new innovations to achieve better value for money. While we encourage innovation, we found that most of them were not looking back to see whether the innovation has been successful. This is an important step, which would help inform future activities. Hastings District Council does this well.

1.7 Findings by peer group

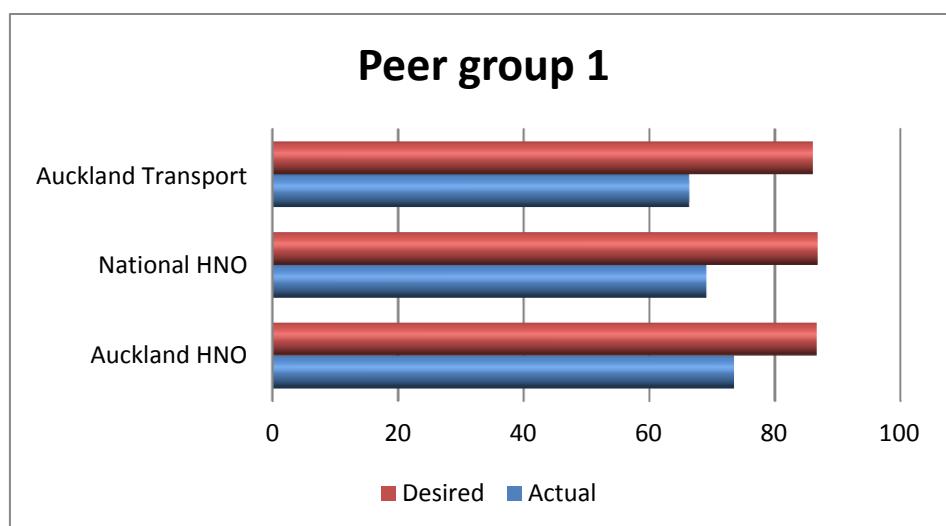
Overall, the average level of asset management was assessed to be at an Intermediate level (current score of 69) against an target of lower advanced (target score 80)

There is some variability in asset management scores for the organisations assessed. Each organisation has received a report with provides further detail of the findings and improvement opportunities for their organisation.

Overall the level of asset management maturity in transport organisations reviewed is at an Intermediate level. For the purposes of this review we have split the results into four peer groups:

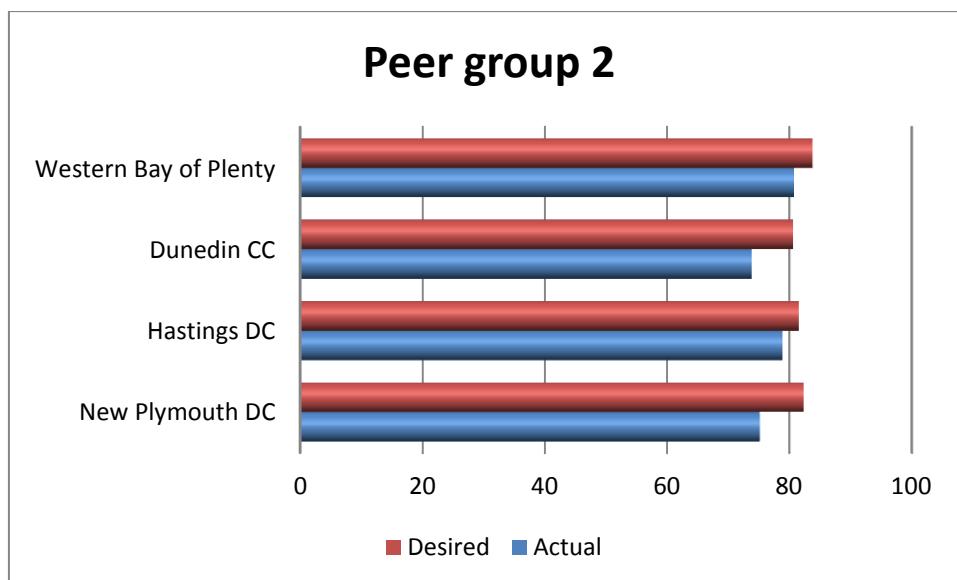
1. Transport organisations with complex networks and targeting advanced asset management (Auckland Transport and NZ Transport Agency - HNO National Office and Auckland Region). This peer group has been separately identified as they are all larger organisations with complex networks where it is expected that they will have leading practice asset management.

2. Transport organisations with less complex networks and targeting advanced asset management maturity (Western Bay of Plenty, New Plymouth DC, Hastings DC and Dunedin DC).
 3. Transport organisations with less complex networks and targeting intermediate asset management maturity (Queenstown Lakes DC, Whangarei DC, Thames Coromandel DC, Otago HNO, Waipa DC, Porirua CC and Tasman DC).
 4. Waimate District Council has a stable and less complex network and is appropriately targeting a core asset management maturity.
1. **Large transport organisations with complex networks and targeting advanced asset management maturity**



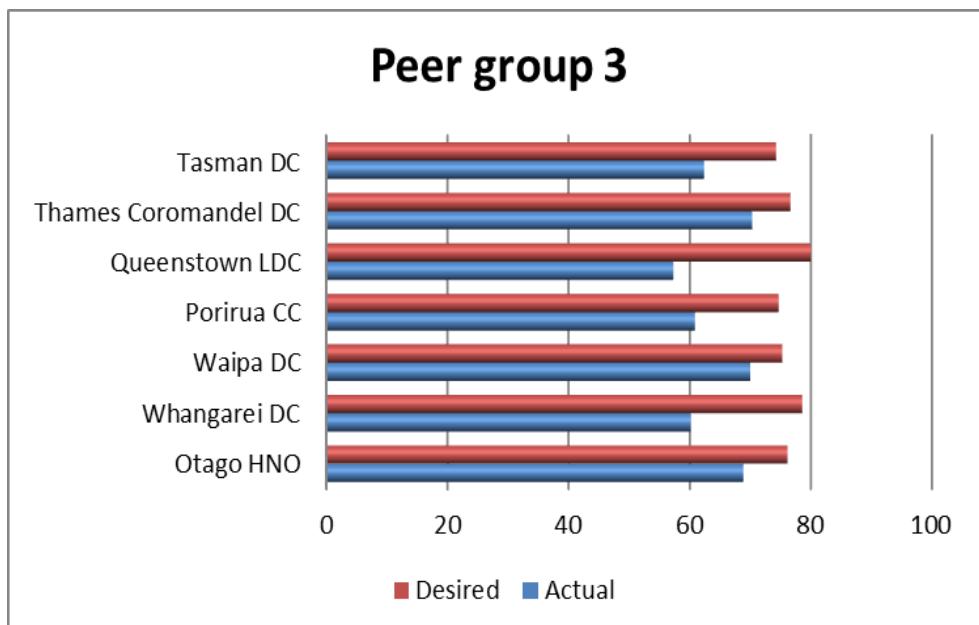
Organisations with large asset bases, such as NZ Transport Agency HNO (National Office & Auckland Region) and Auckland Transport scored their current capability at an intermediate level of maturity, with an expectation to improve to an advanced level. Each had made significant improvements in the preceding three years and is on track to achieve more advanced level asset management capability appropriate to the size and complexity of their asset bases.

2. **Transport organisations with less complex networks and targeting advanced asset management maturity**



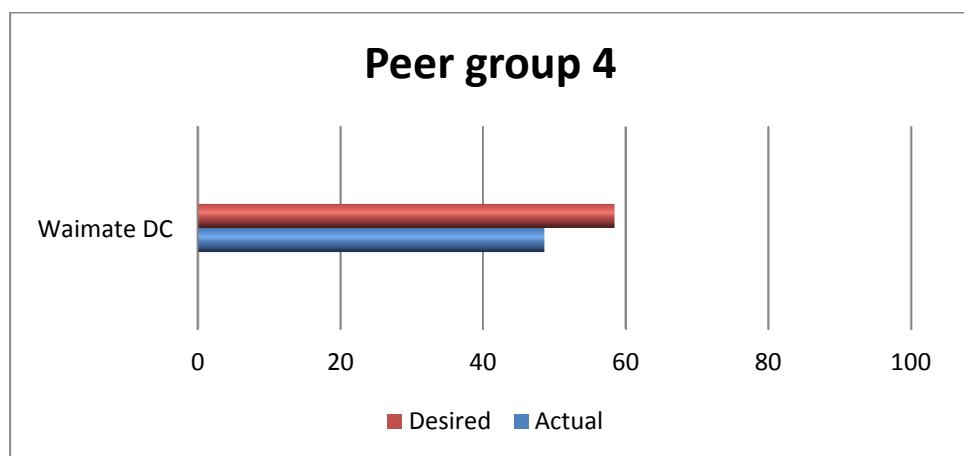
Whilst we commend these Councils for their achievements in asset management, we question whether it is good value for money for them to be aiming at an advanced level of maturity. For the size and complexity of their networks, we believe that an intermediate level is appropriate.

3. **Transport organisations with less complex networks and targeting intermediate asset management maturity**



This peer group has been separately identified as they are all organisations managing local roads and aiming for an intermediate level asset management maturity. We agree that an intermediate level is appropriate for these organisations.

4. Transport organisations with less complex networks and targeting core asset management maturity



Waimate District Council has a small stable network and is appropriately aiming for a core level of asset maturity.

Appendix One: Methodology

The review process included the following steps:

1. A self-assessment questionnaire was sent to participating organisations (refer Appendix Two for a copy of the questionnaire).
2. NZ Transport Agency reviewers, a GHD asset management consultant and asset management staff from each organisation met to discuss the self-assessment results and moderate the scores.
3. The findings were summarised into draft reports.
4. Individual reports were finalised after feedback was received from the participating organisation.
5. This report, capturing common themes and lessons learned, was completed (and published on the NZ Transport Agency website).

The self-assessment required the organisation to provide a current maturity score and a score for a targeted level of maturity. The appropriate target was set through the initial self-assessment and moderated through the assessors' experience in working across similar asset intensive sectors.

Through the interview process, the current and appropriate scores were validated and agreed with organisation representatives who had completed the self-assessment. Where there was a difference of opinion on the score, the differences were discussed and the final scores reflect that discussion. Further observations and improvement opportunities were noted through the onsite interviews and have been included in the draft reports.

Asset Management Planning Assessment

Organisations scored their performance against each of the 38 questions grouped into the following areas:

- Lifecycle
- Risk
- Levels of service
- Growth
- Demand
- General

The assessment questionnaire is provided in full in Appendix Two.

Organisations Reviewed

We selected a sample of local government and Highways & Network Operations with a mix of size and geographical spread to represent the transport industry across New Zealand.

The following thirteen organisations were reviewed:

- Auckland Transport
- Dunedin CC
- Hastings DC
- NZ Transport Agency – Highways & Network Operations:
 - National Office
 - Auckland
 - Otago
- New Plymouth DC
- Porirua CC
- Queenstown Lakes DC
- Tasman DC
- Thames Coromandel DC
- Waipa DC
- Western Bay of Plenty DC
- Whangarei DC
- Waimate DC

Appendix Two – Assessment Questions used for the reviews

Question Number		Main question	Sub question	Response	Self score	Desired score	difference
	Life Cycle Management	<i>Understanding Failure Modes</i>					
1		How do you develop your three year capital and operating program?					
2		How well do you understand and manage your network management costs as a percentage of the total maintenance budget?	What are your management costs as a percentage of the total maintenance and renewals budget?				
3		How closely do you align your renewals programme with depreciation for your network over a ten year period?	Does your TLA fully fund depreciation from rates?				
4		How well are your critical assets identified, monitored and managed?					
5		How do you know your programme is optimal?					
6		What is your decision making criteria used to develop your programme?	What evidence do you have to support your programme?				
7		How do you balance the need for additional funds to maintain your network to agreed service levels with budget constraints?	How are you monitoring the impact of any cost saving initiatives e.g. deferred work, procurement options, collaboration, new materials? Where is the evidence?				
8		How do you benchmark your performance against your peers and/or all NZ?	How often do you do this comparison and what do you do with this information?				

Question Number		Main question	Sub question	Response	Self score	Desired score	difference
9		How have you ensured all your critical assets are recognised in the Asset Management Information System?	Is there a decision framework that encompasses all the assets? Is it documented and where?				
10		Have you got different pavement strategies for each network classification?	Please explain				
11		How do you trade off expenditure between maintenance and renewals?	How do you identify the difference in budgets with any renewal investment, i.e. the relationship between maintenance and renewals				
12		When you invest in new capital how do you consider the whole of life costs and adjust the maintenance budget accordingly?	How do you make budget adjustments to allow for new investment				
Risk		<i>Risks to NZTA</i>					
13		What issues, if any, are you facing with delivering your agreed programme on time and within budget?	What strategies are you using to monitor or mitigate these issues? Is there a risk of not meeting the agreed Levels of Service?				
14		How well aligned is your AMP financial plan with your Long Term Plan?					
15		How do you manage knowledge, capability and capacity in your organisation?	What AM training do you do in your organisation?				
16		How do you rate the quality of your asset systems?	What evidence do you have for determining this self-assessment of system quality?				

Question Number		Main question	Sub question	Response	Self score	Desired score	difference
17		How do you rate the quality of your asset data?	What evidence do you have for determining this self-assessment of data quality?				
18		Are you using AS/NZS ISO 31000:2009 Risk Management?	Do you have an up to date plan to address the risk of all natural hazard events for every part of your transport network?				
19		How well do you manage and monitor your risk action plan?					
Levels of Service		<i>Customer and technical</i>					
20		How well defined and relevant are your Levels of Service (LoS) as applied to your network?	Is it linked to the road classification?				
21		How have you agreed LoS with your community?	How do you manage community expectations about the cost to provide a safe and efficient network e.g. difference in surface treatments?				
22		Do your technical performance measures support achievement of the customer LoS?					
23		Do the performance measures cover the breadth of all users and asset groups in the network?					
24		How well do the LoS drive business priorities?					
25		How do you demonstrate sustainability in the medium and long term?	Supply of materials, change of materials, consider financial sustainability, competitive market				

Question Number		Main question	Sub question	Response	Self score	Desired score	Difference
Growth		<i>Of the asset base, new, vested and subdivisions</i>					
26		Have you any growth planned? Is there evidence to support this?	Have you considered other (non-construction) options to address this need?				
27		How well do you consider the potential for disposal of assets where they are no longer needed?					
28		Have you included in your budgets the long-term whole of life impacts of new infrastructure i.e. maintenance, operations and depreciation costs?	How?				
29		Do you actively seek 3rd party funding for growth (e.g. developer contribution, targeted rates)?	How do you do this?				
Demand		<i>How much customers consume the services provided by the asset</i>					
30		Are you actively scanning the environment for anticipated changes in demand?	What factors are likely to impact on your network in the foreseeable future e.g. forestry, subdivision, land use changes, freight routes and changes in traffic volumes and type, population, transport mode shift, demand shift, destination hubs?				
31		What are the sources of your demand assumptions and how robust are these?					
32		How do you respond to anticipated increases in demand e.g. through demand or price management?	Do you consider a range of options and can you give examples?				

Question Number		Main question	Sub question	Response	Self score	Desired score	difference
33		How do you respond to anticipated decreases in demand or changes in demand?					
General/ Overall							
34		How do you ensure your AMP remains relevant?					
35		How often do you revisit the assumptions in your AMP?					
36		How do you look for ways to innovate and manage your assets	How do you know when these innovations have been effective, i.e. do you have a system to monitor and report change initiatives? Aim is to improve through reducing cost to meet level of service. This can be achieved by changes to management, procurement, quality, technology and materials				
37		How are you doing business different today compared to the AMP review in 2007?	What are the key differences and improvements from this change?				
38		Is there a continuous improvement culture in your organisation?	Please explain how this works				

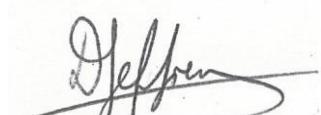


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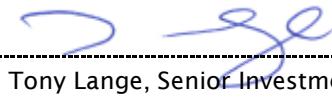
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