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New Zealand
Transport Agency:
Maintaining state
highways through
Network Outcomes
Contracts



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Auditor-General's overview

E ngā mana, e ngā reo, e ngā karangarangatanga maha o te motu, tēnā koutou.

A well-managed state highway network is important to the success of our nation. The state highway network links our towns and communities, farm gates and ports, airports and holiday destinations. In 2018/19, vehicles travelled almost 24 billion kilometres on state highways. The state highway network is one of our most significant built assets – it is more than 11,000 kilometres long and valued at about \$50 billion.

The New Zealand Transport Agency (the Agency) is responsible for managing and maintaining state highways. It spends a significant amount — more than \$500 million — maintaining them each year. Effectively maintaining the condition of state highways is critical. Poor maintenance of the state highway network will increase fuel usage, vehicle running costs, travel times, and potentially reduce safety. New Zealanders ought to be able to trust that the Agency is maintaining our state highways effectively and efficiently.

In 2013, the Agency decided it could more effectively and efficiently maintain state highways by using Network Outcomes Contracts with suppliers. These are contracts between the Agency and suppliers to provide all management and maintenance activities for state highways, such as traffic control, resurfacing and rehabilitating roads, and maintaining road markings, street lighting, and marker posts. The Agency uses these contracts to, through the work of suppliers, maintain more than 90% of the roads making up the state highway network. By 2018/19, the annual amount spent through these contracts increased to nearly 50% of the Agency's overall spending on state highway maintenance. (Spending outside these contracts includes work to maintain bridges on the state highway network and state highways in Auckland.)

My staff looked at how well the Agency is using these contracts to maintain state highways and the outcomes being achieved, including the effect on the road condition of state highways.

What we found

According to the Agency's *State Highway Procurement Strategy 2014*, the main difference between the Network Outcomes Contracts and previous performance-based contracts is that the key result areas in the contracts are now better aligned with the outcomes sought by the Agency at a strategic level. This change aimed to shift the emphasis of the contracts from the services a supplier will carry out to the outcomes those services will achieve.

Most of the key result areas in Network Outcomes Contracts are clearly aligned with the outcomes the Agency is working toward. Some, such as the key result area for road user safety, include performance indicators that provide a clear view on whether the intended outcome is being achieved.

However, other performance indicators and operational performance measures, such as for network performance, remain largely focused on outputs and compliance. In these key result areas, the extent to which the measures enable an overall assessment of road network condition, and the link to the Agency's overall outcomes, are unclear.

The Agency has recognised this. In the latest round of contracts, it has removed some of the compliance-based key performance indicators and is considering introducing a key performance indicator about the condition of the road network. In my view, if done, this will help the Agency to better understand how well these contracts are working to support the overall outcomes of safe, reliable, and resilient state highways.

The Agency has a number of pressures it needs to balance to maintain the network. Maintaining an increasing and more complex network with limited funding requires making trade-offs. One of the reasons that the Agency changed to the Network Outcomes Contracts was to gain greater control over the timing and type of road maintenance and renewal work.

The Agency has strengthened the process it uses to decide when to resurface and rehabilitate state highways to ensure that this work is done at the right time, in the right place. The Agency told us that previously it had over-invested in the condition of the network by renewing state highways too early.

In my view, the changes the Agency has made seem appropriate to ensure that investment is well targeted. However, I note that, since 2009/10, the Agency has spent less on renewing state highways than the rate of depreciation for the state highway network. Depreciation is an estimate of the portion of the asset that was "used up" during the year, and we would normally expect the rate of renewals to match the rate of depreciation. Spending less indicates some risk to the Agency's long-term ability to maintain the condition of state highways. The Agency is aware of this risk, and has highlighted that additional investment in the network will be required as part of developing the next Government Policy Statement on Land Transport.

Broadly, the Agency has maintained the overall condition of the state highway network adequately to meet the road condition performance measures in its annual report. However, when we analysed those performance measures for the state highways maintained through Network Outcomes Contracts, we noted a

declining trend for some measures. People we spoke to, including staff from the Agency, suppliers, councils, and road user groups also told us they think parts of the network are getting worse, or about to get worse.

The Agency told us that this decline is a result of the changes made to the management of maintenance work and renewals. Previously, the Agency was exceeding its performance targets for the condition of the roads. We acknowledge this but, given the forecast gap between budgeted and required renewals, it will be important for the Agency to monitor these measures closely and take action if the road condition continues to deteriorate.

We also consider that the Agency should formally assess whether it is achieving the expected benefits from introducing Network Outcomes Contracts, and take steps to strengthen its identification and monitoring of strategic risks.

What we recommend

To help improve the Agency's management of the contracts, I have made four recommendations. These recommendations are aimed at helping the Agency improve its monitoring and management of outcomes, benefits, and risks that affect its ability to maintain the state highway network. The recommendations also aim to support the collaborative intent of the contracts.

The Agency has started work to address my recommendations – for example, by setting up a Maintenance Contracts Governance Group to measure and report on risks, benefits, and outcomes for all of its maintenance contracts. By fully addressing my recommendations, the Agency should be able to achieve better value for money from the \$500 million spent each year on maintaining state highways, and New Zealanders will have the benefit of driving on better maintained roads.

I thank the Agency, suppliers, councils, road user groups, and other organisations for their support, co-operation, and openness throughout my audit, and their efforts in making state highways safe, reliable, and resilient in connecting New Zealanders.

Nāku noa, nā

John Ryan

Controller and Auditor-General

31 July 2020

Our recommendations

We recommend that the New Zealand Transport Agency:

- monitor and report on the outcomes and benefits achieved from the Network Outcomes Contracts to help it ensure that the contracts are effectively and efficiently supporting the Agency in achieving safe, resilient, and reliable state highways;
- 2. identify, mitigate, monitor, and report on the strategic risks from maintaining the state highway network to reduce the likelihood of those risks affecting the safety, reliability, and resilience of state highways;
- 3. review the roles and delegations of the parties involved in the Network Outcomes Contracts to ensure that they are clear and support collaborative processes between the Agency and suppliers; and
- 4. measure, assess, and report its own performance in supporting the Network Outcomes Contracts, as intended, so it can identify opportunities to improve and be held to account for its own performance.

Introduction

- 1.1 The New Zealand Transport Agency (the Agency) is responsible for managing the state highway network (state highways). State highways play a vital role in linking our towns and communities, and vehicles travelled almost 24 billion kilometres on them in 2018/19. In 2018/19, they were valued at about \$50 billion and were more than 11,000 kilometres long. Each year, the Agency spends more than \$500 million on maintaining them.
- 1.2 Effective and efficient maintenance keeps New Zealand's state highways safe and reliable. If they are not effectively maintained, the road condition will deteriorate and state highways will become less safe.
- 1.3 Deterioration in the condition of the roads can increase fuel usage, vehicle maintenance costs, and travel times for everyone who uses those roads.

Why we carried out our audit

- 1.4 New Zealanders ought to be able to trust that the Agency is maintaining our state highways effectively and efficiently.
- 1.5 In 2010 and 2011, we carried out two performance audits assessing how effectively the Agency planned and delivered the maintenance and renewals of state highways. We made 15 recommendations to the Agency.¹
- 1.6 In 2014, we carried out a follow-up audit to look at how the Agency responded to the findings and main recommendations from the two earlier audits. We found that the Agency had made some changes, including introducing the Network Outcomes Contract model. It was in the process of further improving the quality and completeness of its asset information.²
- 1.7 As a result of our follow-up work, we suggested that the Agency ensure that the Network Outcomes Contract model delivered the intended financial and customer benefits, without a detrimental effect on the market, by:
 - monitoring the contracts for their effect on market behaviour and pricing and the benefits they deliver, and adjusting the procurement process if necessary;
 - establishing robust baseline information, so that meaningful cost comparisons can be made; and

¹ Our recommendations were about improving the quality and completeness of its asset information, improving its planning for maintenance and renewal work, designing and selecting service delivery models, and maintaining relationships and monitoring contracts. For more information, see our reports New Zealand Transport Agency: Information and planning for maintaining and renewing the state highway network (September 2010) and New Zealand Transport Agency: Delivering maintenance and renewal work on the state highway network (September 2011). Both reports are available on our website, www.oag.parliament.nz.

² New Zealand Transport Agency: Maintaining and renewing the state highway network – follow-up report (October 2014). This report is available on our website, www.oag.parliament.nz.

- ensuring that performance monitoring of the contracts happens in practice, by consistently and accurately reporting the results of performance monitoring of the contracts to suppliers, and enforcing any performance improvements.
- 1.8 Network Outcomes Contracts currently cover more than 90% of the roads making up the state highway network by length (the rest of the network is maintained through alliance contracts).³ For simplicity, we use "contracts" throughout this report when referring to Network Outcomes Contracts. When we refer to the people involved in each contract, we use "contract team". Some suppliers have multiple contracts, and each of these contracts has its own contract team.
- 1.9 For each of the last five years, as the Agency set up more contracts, it increased spending through the contracts from \$109 million to \$346 million (see Figure 1).

Figure 1
Spending on the maintenance of state highways through Network Outcomes
Contracts

The bar chart shows a steady increase in spending each year for the last five years, to \$346 million.



Source: Office of the Auditor-General, using data from the New Zealand Transport Agency.

1.10 We wanted to assess how effectively and efficiently the Agency maintains state highways through the contracts. As part of this, we also wanted to assess how

There are 21 contracts. However, the performance of one contract is not currently assessed. In addition to the 21 Network Outcomes Contracts, the Agency also uses two alliance contracts. One is for maintaining the state highways in Auckland, and the other to do emergency and minor maintenance works on the Milford Road. This is to account for the exceptional circumstances relating to these two, such as the volume of traffic in Auckland. An alliance is a shared risk delivery model involving contractors, consultants, and the Agency working together to operate and maintain state highways.

the Agency had managed the risk to market competition that we identified in our 2014 follow-up audit.

What are Network Outcomes Contracts?

1.11 The contracts are between the Agency and a primary supplier to provide all network management and maintenance activities for state highways, such as maintenance for pavements, signs, and streetlights (see Figure 2). The Agency expects suppliers to take a stewardship role in maintaining the network. That means taking ownership for and pride in the services delivered and quality of work done. Some contracts also include council-owned roads that are not part of the state highway network.

Figure 2
What the Network Outcomes Contracts cover

The picture shows that, as well as the road, the contracts include rest areas, cycleways, road signs and markings, streetlights, marker posts, and adjacent footpaths.



Source: Office of the Auditor-General.

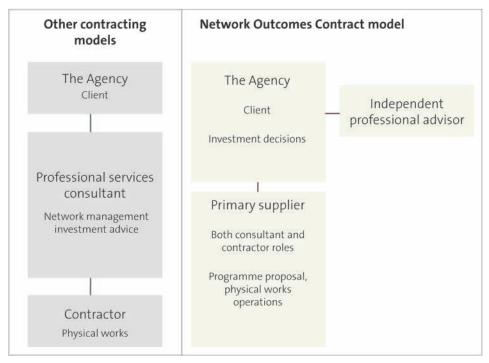
- 1.12 The Agency set out the benefits from introducing the Network Outcomes Contract model in a July 2012 consultation document.⁴ The Agency expected the contracts to increase effectiveness and efficiency, and reduce costs.
- 1.13 In particular, the Agency assumed that longer-term contracts would save money through economies of scale and scope. For suppliers, longer-term contracts would reduce the administrative costs of re-tendering after shorter terms and give them increased certainty.
- 1.14 The Agency also assumed that it would be more efficient to have fewer contracts, covering 21 of 23 regions,⁵ with standardised terms. This was expected to significantly reduce administrative and tendering costs, enable it to use resources optimally, and support enhanced capability-building throughout the industry by more strategically allocating people and expertise.
- 1.15 The Agency also assumed that all-inclusive contracts (using two fee components, "lump sum" and "measure and value") would encourage greater accountability by suppliers for the overall performance of the network. As well as providing financial savings from improving the co-ordination of works on any specific road, this could improve road users' experience.
- Other potential benefits included a consistent performance framework, with performance incentives to encourage suppliers to achieve the desired outcomes. Enhanced data reporting was expected to help the Agency better monitor the outcomes achieved.
- 1.17 The Agency also expected to have greater influence over the timing and type of some works.
- 1.18 The Agency previously used other contracting models to maintain state highways. They typically involved a contract between the Agency and a consultant, and another contract between the Agency and a contractor. The consultant was responsible for asset management and for managing the contractor.
- 1.19 The Network Outcomes Contract model emphasises a strong collaborative and partnering relationship between the Agency and suppliers to achieve the contract outcomes. The Agency and suppliers engaging with each other constructively significantly influences the success of the contract because the parties depend on each other. Figure 3 shows the main relationship differences between other previous contracting models and the Network Outcomes Contract model.

⁴ New Zealand Transport Agency, State Highway Maintenance and Operations Review consultation document, July 2012.

⁵ Of the 23 regions, 21 are covered by contracts and two (Auckland System Management and Milford Road) are alliances. There were previously 37 contract regions.

Figure 3
Other contracting models compared with the Network Outcomes Contract model

Other contracting models have a consultant between the Agency and the contractor; Network Outcomes Contracts do not.



Source: Office of the Auditor-General.

What we looked at

- 1.20 We audited how effectively and efficiently the Agency is using the contracts to maintain state highways. We looked at how the Agency:
 - manages risks and opportunities associated with the contracts to achieve desired outcomes, including whether the roads are well maintained;
 - · manages the contracts with suppliers; and
 - identifies, shares, and applies lessons from the contracts.
- 1.21 We did not audit:
 - the tender process for awarding the contracts to suppliers;
 - the completeness and quality of the asset information; or
 - the Agency's maintenance of state highways not covered by a contract.

1.22 Our report focuses on the performance of the Agency because it is responsible for maintaining state highways. We did not audit or comment on the performance of the suppliers, other than in the context of the Agency managing suppliers' performance under the contracts.

How we carried out our audit

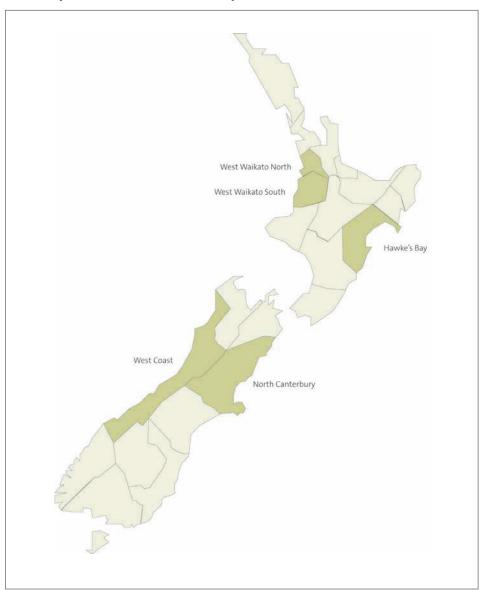
- 1.23 We looked at five contracts to assess how effectively Agency staff are managing the individual contracts, and the differences in performance. The five contracts we looked at in detail were Hawke's Bay, North Canterbury, West Coast, West Waikato North, and West Waikato South (see Figure 4). This selection was based on network size, performance (including high and low performers based on the Agency's data), the value of the contract, and having a range of suppliers in our sample.
- 1.24 We analysed spending on the maintenance of state highways, other financial data, and a range of performance data, including relationship survey results and road condition data.
- 1.25 We analysed documents from the Agency, suppliers, and other relevant organisations. The documents included information on expected benefits, risk management, contract management, monitoring and reporting of performance, governance of contracts, internal audit reviews, and information about applying lessons.
- 1.26 We interviewed more than 50 staff from the Agency, suppliers, and subcontractors to check and clarify our understanding of the documents and to supplement the documentary and data evidence. To get a regional perspective, we interviewed staff from the Agency, suppliers, and subcontractors who are directly involved in each of the five contract regions.
- 1.27 We also interviewed members and staff from industry bodies, road user groups, local government, and other relevant organisations to understand how the change in contracting model had affected them.

Structure of this report

- 1.28 In Part 2, we discuss the Agency's and the contract teams' performance in maintaining state highways and whether the Agency has achieved the benefits it expected from the contracts.
- 1.29 In Part 3, we discuss the Agency's management of strategic risks, and in Part 4, we discuss the collaborative intent of the contracts.
- 1.30 In Part 5, we discuss how the Agency identifies, shares, and applies lessons. We also discuss the latest round of contracts.
- 1.31 The Appendix sets out the main groups involved in the contracts and the relationships between them.

Figure 4
Contracts we looked at

The map of New Zealand shows the five regions of West Waikato North, West Waikato South, Hawke's Bay, West Coast, and North Canterbury.



Source: Office of the Auditor-General.

2

Reporting on outcomes and benefits could be improved

- 2.1 In this Part, we look at the Agency and contract teams' performance in maintaining state highways. We discuss:
 - whether the contract teams are meeting their performance indicators in the contract;
 - the extent to which the performance measures included in the contracts support an assessment of their contribution to the Agency's outcomes;
 - whether the Agency is assessing the benefits of the contracts;
 - the benefits of the contracts; and
 - the trade-offs the Agency made to get those benefits.
- 2.2 Given the significance of the contracts in maintaining state highways, we expected the Agency to monitor the performance of the contract teams to assess whether it has received what was contracted and whether the contracts deliver value for money.
- 2.3 We expected the measures and indicators for assessing the contract teams' performance to be clearly aligned with the Agency's organisational performance framework, including its strategic priorities and desired outcomes.
- 2.4 We also expected the Agency to be clear about the benefits it expected to achieve from introducing the Network Outcomes Contract model, and to monitor and report on whether it achieved those benefits. Based on its assessment, we expected the Agency to take any steps needed to achieve those benefits.

Summary of findings

- 2.5 The contract teams are mostly meeting their key performance indicators.

 However, the performance indicators under the network performance key result area do not include an assessment of the overall road condition being delivered, and many key performance indicators are focused on outputs or compliance. The extent to which the measures enable an overall assessment of road condition and link to the Agency's overall outcomes is unclear.
- 2.6 For the latest round of contracts, the Agency has made changes, such as removing some of the compliance-based key performance indicators and considering introducing a network condition key performance indicator. If done, this should help provide a better link between the assessed performance of the contract teams and how they are contributing to the Agency's outcomes of safe, reliable, and resilient state highways.
- 2.7 The Agency has not assessed whether it has received the benefits it expected from introducing the Network Outcomes Contract model. We recommend that the Agency monitor and report on the outcomes and benefits of maintaining the

- state highway network through the contracts to ensure that the contracts are fully effective and efficient.
- 2.8 Based on our analysis, we consider that the Agency has achieved some of the expected benefits from introducing the Network Outcomes Contract model, including a greater understanding of the need for proposed renewals and a more nationally consistent process to identify and approve those renewals. This has contributed to reduced spending on renewals. Subcontractors have also benefited from a better understanding about the trends affecting the wider industry and from the larger suppliers transferring knowledge to them because of the Agency's requirement for suppliers to give them a minimum percentage of work.
- 2.9 However, in achieving these benefits, the Agency has made some trade-offs. This includes deferring renewals, which might be appropriate but could create a long-term risk to the condition of state highways. To manage the associated risks from the trade-offs, the Agency needs to monitor and report on them closely.

Contract teams are mostly meeting their performance indicators

2.10 The Agency monitors the performance of each contract team and gives them an overall performance score. The overall performance score is calculated from how well contract teams did against key result areas. Each key result area has several key performance indicators.

Overall performance score

2.11 Every year, each contract team receives an overall performance score out of four (a score of two or more is acceptable performance). From 2015/16 to 2018/19, the average overall performance score for the contract teams ranged from 2.92 to 3.13. During this period, most contract teams achieved the overall minimum acceptable standard. However, the contract team with the lowest score in 2015/16 achieved a performance rating of poor even though its overall performance score was above two. This was because two of the underlying key result areas had a score of less than two.

Key result areas

- 2.12 A contract team's overall performance score is calculated from the individual scores against the key result areas. The key result areas that are currently scored are:
 - assurance and value;
 - customer;
 - · health and safety;

- network performance;
- · road user safety; and
- · sustainability.
- 2.13 The key result area for the health of the relationship between the Agency and the supplier is not currently scored.
- 2.14 The Agency rates the scored key result areas from one to four every four months.

 A score of two or more is acceptable performance.⁶ Figure 5 shows that, on average, the contract teams are achieving the key result areas.

Figure 5
Average overall score (and range of scores) against the key result areas, from 2015/16 to 2018/19

Key result area	2015/16	2016/17	2017/18	2018/19
Assurance and value	2.6 (1.0-4.0)	2.4 (1.3-3.1)	2.7 (1.3-3.7)	2.8 (2.0-3.8)
Customer	3.2 (2.1-4.0)	3.4 (2.8-4.0)	3.5 (3.1-3.8)	3.3 (2.7-3.8)
Health and safety	3.6 (2.8-4.0)	3.3 (2.6-3.7)	3.4 (2.6-4.0)	3.5 (2.6-4.0)
Network performance	3.0 (1.7-3.5)	2.9 (2.2-3.4)	3.0 (2.2-3.8)	3.0 (2.4-3.8)
Road user safety	2.9 (2.0-3.8)	2.4 (1.7-3.1)	2.5 (2.0-3.0)	2.8 (2.2-3.6)
Sustainability	3.3 (2.0-4.0)	3.1 (2.4-3.8)	3.2 (2.3-3.8)	3.3 (2.8-3.8)

Source: Office of the Auditor-General, using data from the New Zealand Transport Agency.

2.15 From 2015/16 to 2018/19, the overall average score for most of the key result areas is relatively stable, with some improvement in the scores for the lower-performing contract teams. This indicates that the contract teams are, on average, meeting acceptable standards of performance against the key result areas.

Key performance indicators

- 2.16 Each key result area has several key performance indicators. The key performance indicators range from measuring whether the contract team has an emergency procedures preparedness plan to the trend for deaths and serious injuries in its region.
- 2.17 We reviewed how the contract teams performed overall against each of the 22 reported and scored key performance indicators from 2015/16 to 2018/19. As an overall national average against each key performance indicator, the contract teams achieved their key performance indicators.

⁶ A score of 1 to less than 2 is poor, 2 to less than 2.66 is the minimum condition of satisfaction, 2.66 to less than 3.33 is best practice, and 3.33 or more is outstanding.

- 2.18 However, after improving in 2015/16, the death and serious injury trend worsened in 2016/17 and 2017/18. This means more people were killed or injured on state highways in 2016/17 and 2017/18 for each vehicle kilometre travelled compared with the previous year. In 2018/19, the key performance indicator score did improve.
- 2.19 Although effectively maintaining state highways helps make them safer, how well they are maintained is only one of several factors that can contribute to deaths and serious injuries on state highways.
- 2.20 On average, the contract teams tend to score highly on the compliance- or inputbased key performance indicators. Figures 6 and 7 show the seven highest and five lowest average key performance indicator scores for 2018/19, and the range.

Figure 6
Highest seven average key performance indicator scores, 2018/19

Key performance indicator	Score and performance level
Traffic control plan – The contract team makes effective, consistent use of its traffic control plan to provide a safe environment for staff and road users by using, auditing, and reviewing it regularly.	3.9 – Outstanding (3.0-4.0)
Emergency procedures preparedness plan – The contract team makes effective, consistent use of its plan to ensure that the team is ready to react to incidents on the network, and continuously improves its management of incidents by using, auditing, and reviewing the plan regularly.	3.9 – Outstanding (3.0-4.0)
Customer and stakeholder communications management plan – The contract team makes effective, consistent use of its plan to manage communications with customers and stakeholders, by using, auditing, and reviewing it regularly.	3.9 – Outstanding (3.0-4.0)
Network safety trend report – The contract team demonstrates its understanding of the safety issues on the network. It is proactively seeking improvement opportunities, implementing improvements, and monitoring their effectiveness.	3.8 – Outstanding (3.0-4.0)
Environmental and social management plan – The contract team makes effective, consistent use of its plan to manage the impact of its activities on the physical and social environment by using, auditing, and reviewing it regularly.	3.8 – Outstanding (3.3-4.0)
Communications of impact of events and incidents on customers – The contract team communicates proactively with customers, giving them timely, reliable information about planned and unplanned events on the network.	3.8 – Outstanding (2.7-4.0)
Environmental triangle – The contract team demonstrates commitment to environmental and social responsibility throughout its activities under the contract.	3.8 – Outstanding (3.0-4.0)

Figure 7
Lowest five average key performance indicator scores, 2018/19

Key performance indicator	Score and performance level
Loss of control in darkness — Statistics for crashes that occur on bends during darkness on the network are decreasing, showing that the contract team understands those assets that have a direct relationship to driving in darkness, and implements effective measures that improve road users' ability to drive safely.	2.1 – Minimum Condition of Satisfaction (1.3-2.7)
Healthy market pledges – The contract team is consistent and timely in meeting the pledges in its tendered submission, and implements ongoing value-for-money opportunities to ensure that subcontractors have fair access to the market for providing services on the network.	2.2 – Minimum Condition of Satisfaction (1.3-3.3)
Network performance tender pledges are delivered – The contract team is consistent and timely in meeting the network performance pledges in its tendered submission and implements ongoing value-for-money opportunities to deliver services on the network, adding value to the contract's performance.	2.3 – Minimum Condition of Satisfaction (1.0-4.0)
Innovation – The contract team's organisational culture actively values innovation, efficiency, and continuous improvement, which it shares across any of the other contracts. Innovation encourages continuous improvement and results in demonstrable benefits. This KPI is intended to encourage an ongoing attitude that activities can be done better.	2.3 – Minimum Condition of Satisfaction (1.3-4.0)
Compliance with contractor's monthly programme of work — The contract team plans realistic, achievable monthly programmes of work, and consistently delivers the activities as scheduled.	2.4 – Minimum Condition of Satisfaction (1.0-4.0)

Source: Office of the Auditor-General, using data from the New Zealand Transport Agency.

- 2.21 When we looked at the trends for the contract teams against each key performance indicator, we found a similar story. Over time, the contract teams have generally improved their performance against the more compliance- or input-based key performance indicators. However, their performance against the other key performance indicators had generally remained the same or, for some, decreased.
- These results suggest that, overall, the contract teams are delivering acceptable standards of performance as measured by the current key result areas and their associated key performance indicators.

Performance measures and indicators are changing to better reflect their contribution to outcomes

- 2.23 The Agency's State Highway Procurement Strategy 2014 stated the main difference between the contracts and previous performance-based contracts is that the key result areas are now better aligned with the outcomes sought by the Agency at a strategic level. In our view, for the intent of the contracts to be fully realised, the measures and indicators in each key result area must enable an overall assessment about performance against the key result area, and enable the Agency to assess the contribution of the contracts to the Agency's overall outcomes.
- 2.24 Most of the key result areas are clearly aligned with the outcomes that the Agency is trying to achieve. Some include outcomes-based key performance indicators that provide a clear view on whether the outcome sought through the key result area is being achieved by the contract team. For example, the death and serious injury trends and loss of control in darkness key performance indicators are clearly linked to the road user safety key result area.
- 2.25 For the network performance key result area, the performance indicators remain largely focused on outputs. Only one of the six key performance indicators, the overall operational performance measure score, includes aspects of road condition. However, we could see a clear link to road condition in only about 15% of the more than 140 operational performance measures that are aggregated under this key performance indicator. In our view, road condition is critical to assessing the network performance key result area, and none of the key performance indicators provide a definitive overall assessment of road condition. Road condition is also critical in understanding how effectively the contracts are contributing to the Agency's overall outcomes of safe, reliable, and resilient state highways.
- 2.26 For the latest round of contracts, the Agency is considering including a key performance indicator on network condition under the network performance key result area.
- 2.27 Across all of the key result areas, many performance indicators are focused on compliance. Seven of the key performance indicators are about whether a contract team has a specific plan (such as a traffic control plan) and is complying with it. As noted in paragraph 2.20, the contract teams, on average, tend to score higher in these key performance indicators.
- 2.28 We asked staff at the Agency and suppliers, including staff who are part of a contract team, for their views on the current measures. They told us that, in general, the performance indicators do not always encourage the right behaviours and outcomes. They mentioned several reasons for this.

- 2.29 Suppliers decide what to do based on what they are measured on. This leads them to be more reactive than the Agency would like or to focus on delivering the work programme rather than on the quality of the resurfacing or rehabilitation (renewals). As the Agency's 2017/18 Looking Back Review Operations and Maintenance Investment Achievement states:
 - ... there are some warning signs that the increased volume of construction activity, may be coming at the expense of construction quality that incurs premature maintenance, especially for Asphaltic Material rehab sites one year after construction.
- 2.30 Other reasons Agency and supplier staff gave included:
 - the key performance indicators are focused on inputs, such as the contract plans, rather than on outcomes;
 - the current performance indicators do not recognise continuous improvement (most of the performance score criteria are based on achieving a set level of performance); and
 - some operational performance measures are not focused on the right things, which affects the trade-offs that suppliers make to achieve an overall acceptable performance. For example, some suppliers highlighted the amount of effort they spend on clearing litter to meet the relevant operational performance measure, and questioned whether that effort would be better directed towards activities that make the roads safer (such as fixing potholes).
- 2.31 In our view, the first round of contracts did not fully achieve the intended shift in emphasis from what services a supplier will carry out to what outcomes those services will achieve. For the latest round of contracts, the Agency has made changes to focus indicators more on outcomes. For example, the Agency has removed some of the more compliance-based key performance indicators. This, along with introducing a network condition key performance indicator, should help to provide a better link between the assessed performance of the contract teams and how they are contributing to the Agency's outcomes of safe, reliable, and resilient state highways.

Benefits from the Network Outcomes Contract model have not been assessed

2.32 The Agency's *State Highway Procurement Strategy 2014* stated that it would complete detailed reviews of how well the Network Outcomes Contract model has worked. The Agency changed to the Network Outcomes Contract model because it believed that it could maintain state highways more effectively and efficiently than it had under previous models.

- 2.33 The Agency has not yet reviewed the Network Outcomes Contract model and cannot be certain whether it has achieved the benefits it expected. The procurement strategy did not provide any guidance about what the review should cover. We expect that such a review would have allowed the Agency to assess any benefits achieved by the model and how to improve it.
- 2.34 Not reviewing the model has limited the Agency's ability to make any changes that are needed to achieve the expected benefits in future contracts.
- 2.35 In our view, the Agency needs to more systematically monitor the benefits and how they contribute to outcomes. This would provide assurance to Parliament and the public that the contracts are helping to make state highways safe, reliable, and resilient in the most effective and efficient way.

Recommendation 1

We recommend that the New Zealand Transport Agency monitor and report on the outcomes and benefits achieved from the Network Outcomes Contracts to help it ensure that the contracts are effectively and efficiently supporting the Agency in achieving safe, resilient, and reliable state highways.

- 2.36 During our audit, the Agency formed a Maintenance Contracts Governance Group to help improve its oversight of the delivery of outcomes and benefits for all maintenance contracts, including the contracts. The Agency intends for the Maintenance Contracts Governance Group to prepare an annual report that sets out the outcomes achieved from all of the Agency's maintenance contracts.
- 2.37 The Agency also told us that it has now started a review of the contract terms and conditions in collaboration with sector representatives.

Some benefits have been achieved

- 2.38 Based on our analysis, we consider that the Agency has achieved some of the expected benefits from introducing the Network Outcomes Contract model. They include:
 - reduced spending on routine maintenance activities (see paragraphs 2.41-2.44);
 - greater understanding of the need for proposed renewals and a more nationally consistent process to identify and approve those renewals (see paragraphs 2.45-2.52);
 - the ability to defer some renewals by changing the process for deciding on renewals (see paragraphs 2.53-2.54); and
 - better monitoring and benchmarking of the contracts through consistent performance measures and indicators for the contracts (see paragraphs 2.56-2.67).

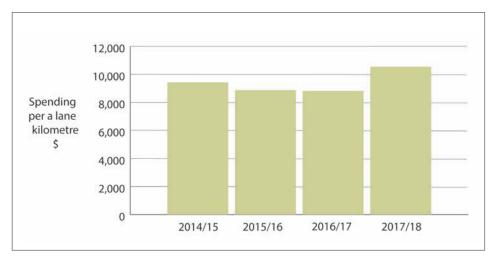
- 2.39 Other benefits include longer-term contracts allowing suppliers and subcontractors to invest more in people and equipment because they know they will have a certain amount of work for the next several years.
- 2.40 Subcontractors told us that they had also benefited from a better understanding of trends affecting the wider industry and from the larger suppliers transferring knowledge to them. These benefits have come about because of the Agency's requirement for suppliers to give subcontractors a minimum percentage of work.

Reduced spending on routine maintenance activities

- 2.41 Agency staff told us that the Agency saved money under the Network Outcomes Contract model because the Agency generally pays a fixed price for routine maintenance rather than a negotiated price based on a schedule of rates.
- 2.42 Figure 8 shows that the Agency was able to spend less on routine maintenance for each lane kilometre of state highways in 2015/16 (a total reduction of \$12.8 million) and 2016/17 (a total reduction of \$14.2 million) than it spent in 2014/15.

Figure 8
Spending on routine maintenance for each lane kilometre of state highways in regions maintained by Network Outcomes Contracts, 2014/15 to 2017/18

The bar graph shows spending of over 9,000 for each lane kilometre in 2014/15, under 9,000 in 2015/16 and 2016/17, and over 10,000 in 2017/18.



Source: Office of the Auditor-General, using data from the New Zealand Transport Agency.

Note: The graph does not include any spending by the Agency's National Office or in response to the Kaikōura earthquake.

- Overall, the main contributor to this was the Agency spending less in total on sealed pavement maintenance. Compared with 2014/15, the Agency spent about \$17.8 million less in 2015/16, \$22.7 million less in 2016/17, and \$7.7 million less in 2017/18.
- 2.44 However, in 2017/18, the Agency spent more (about \$25.3 million more compared with 2014/15). The main contributor to this was network and asset management, including network inspections, managing the road network, and implementing and operating road asset management systems. The Agency spent about \$19 million more on this in 2017/18 than it did in 2014/15. The other significant increase was in environmental maintenance, such as maintaining rest areas, collecting litter, and clearing slips.

Stronger process to decide the renewals work programme

- 2.45 In 2013, the Agency changed its process for deciding the renewals work programme. The new process plans renewals nationally and delivers them regionally, with the Agency centralising funding decisions. The Agency made this change to have greater financial control over the timing and type of renewals, in an effort to ensure that they were done at the right time, in the right place.
- 2.46 The previous model involved Network Management consultants proposing regional programmes and Area Managers working closely with the consultants to finalise them. The new process has led to a more nationally consistent prioritisation of work, and the Agency has a greater understanding of the need for renewals.
- 2.47 Under the new process, the contract team is responsible for preparing work programmes of renewals that are aligned with the contract team's Maintenance Management Plan⁷ and instructions from the Agency.
- 2.48 There are two main work programmes for renewals. The first is produced every three years, in line with the Agency's funding cycle. This is a three-year plus seven-year programme (that is, an overall 10-year programme), which the Agency uses to help prepare its National Land Transport Programme for each three-year period.
- 2.49 The second main work programme is produced each year. It is an annual plan to deliver the approved in-principle three-year programme and update the forecast 10-year programme.

⁷ The contract teams prepare a Maintenance Management Plan for each contract. Agency staff then review and agree the plan to check that it aligns with the Agency's expectations and goals. The contract teams are guided by the plan in deciding what work is to be done and when. The plan outlines the factors, procedures, and processes the contract teams use to decide what maintenance and renewal work is to be done and when. For example, to decide whether a section of road needs to be resealed, the contract teams need to analyse condition, pavement, maintenance activity, and traffic data.

- 2.50 Once the draft work programmes have been completed, staff from the Agency and the contract teams jointly inspect the proposed sites for renewals. This is so both parties agree on when the renewal needs to happen and on the appropriate treatment.
- 2.51 After the contract teams and the Agency agree on the work programmes at the contract level, the work programmes are submitted for consideration and, subject to prioritisation of available funding, approval from the Agency at the national level. Agency staff and contract teams might be asked for more information to justify the level of investment they have asked for.⁸
- 2.52 These changes have provided the Agency with a greater understanding of the need for proposed renewals, and led to a more nationally consistent process to identify and approve those renewals. However, at times, the changes have led to delays in decision-making. These delays have adversely affected the contract teams (see paragraphs 4.24-4.27), such as affecting their ability to secure the necessary resources and contractors to deliver the work programme.
- 2.53 The change in the process for deciding renewals also allowed the Agency to initially defer a significant amount of renewal work. Nationally, the Agency was able to defer the renewal of 281 kilometres of state highways in 2014/15, 146 kilometres in 2015/16, and 36 kilometres in 2017/18.
- This is reflected in our analysis of the Agency's renewal spending in the regions maintained under the contracts. We estimate that the Agency spent about \$23.9 million less on all renewals in 2015/16 than in 2014/15, and \$10.5 million less in 2016/17. Renewal spending then increased by \$37.2 million in 2017/18 compared with 2014/15.
- 2.55 In our view, the changes the Agency made to strengthen the process to decide when to resurface and rehabilitate state highways make sense, and should ensure that its investment is well targeted. The Agency told us that the previous approach was leading to over investment in renewing highways (that is, renewal work was carried out earlier than it needed to be). Well-targeted renewals are important because the Agency has a number of pressures it needs to balance, including maintaining an increasingly larger and more complex network with limited funding.

⁸ The other significant work programmes done under the contracts are to reduce the roughness of state highways and to increase skid resistance. Similar to the annual plan, the contract teams analyse Agency-supplied data to identify potential sites for work and submit them to the Agency for approval. The Agency then reviews and approves the work programme as appropriate.

Performance information can now support continuous improvement

- 2.56 Despite limitations in the contracts' performance measures and indicators, having consistent performance measures and indicators for all contracts means that the Agency can now analyse performance information at a national level to support continuous improvements in maintaining state highways.
- 2.57 Previously, the Agency used several different types of maintenance contracts, each with its own performance measures and indicators. This made it difficult for the Agency to systematically or consistently assess information at a national level or to benchmark contractor performance.
- 2.58 With the contracts, the Agency introduced a consistent set of performance measures and indicators. This has allowed it to benchmark the performance of contract teams, track progress over time, identify issues, and provide feedback to contract teams on what they need to improve.
- 2.59 The Agency's performance assessment process relies on contract teams to report on and audit their performance. There is a moderation process to ensure national consistency. The measures and indicators used to assess the contract teams' performance include operational performance measures and key result areas with several associated key performance indicators.
- 2.60 Each operational performance measure is the contract standard that the Agency expects contract teams to maintain for each asset (such as roads, marker posts, and signs) and road class.
- 2.61 There are more than 140 operational performance measures, including measuring the amount of litter on the side of the road, the visibility of signs, and the number of potholes. Contract teams audit their performance against these measures. The audit frequency varies for each measure, but each contract team is required to report on its performance against the operational performance measures monthly.
- 2.62 Every four months, each contract team assesses its performance against the key result areas and associated key performance indicators. Self-assessments are based on guidance provided by the Agency and each contract team's Quality Management Plan. The Contract Management Teams and the Contract Boards (see the Appendix) review the self-assessment and associated evidence, and the contract team's scores against the key result areas and its overall performance level are endorsed.
- 2.63 In 2015/16, the Agency introduced a moderation process to help ensure that self-assessment scores are consistently applied to all contract teams. The moderation process is run by the Agency's Planning and Performance Team and involves selected Agency regional staff (outside of the Planning and Performance Team).

Part of the moderation process could include asking contract teams for further information or explanation. For the performance assessment periods from 2015/16 to 2018/19, the moderation process resulted in changes to about 10% of the endorsed scores. These changes were mostly decreases.

- 2.64 At the end of each year, an overall annual performance score for each contract team is calculated based on the moderated key result area scores for each four-month period. The moderation process helps the Agency to assess the contract teams impartially, so that similar performance is treated similarly.
- The main incentives to encourage contract performance include an at-risk payment for performance against the operational performance measures, incentive payments, and decreases or increases in the length of the contract depending on the overall annual performance score. The incentives encourage good performance against the operational performance measures and the key result areas.
- 2.66 However, the incentives and penalties under the contract can also lead to unintended consequences. For example, the incentive of sharing savings from the reduced programme of renewals could lead to contract teams proposing fewer renewals than are needed to maintain the condition of the state highways.
- 2.67 By introducing consistent performance measures and indicators, the Agency can now analyse performance information to support continuous improvement in maintaining state highways. However, we identified issues with the current moderation process that cause frustration and tension, which the Agency could usefully consider (see paragraphs 4.28 to 4.35).

Trade-offs have been made in achieving these benefits

- 2.68 Importantly, the Agency has made some trade-offs to achieve these benefits.

 To manage the associated risks from these trade-offs, the Agency needs to monitor them. The Agency would be able to use the information it gathers while monitoring those risks to make decisions about realising further benefits and weigh those against the costs of doing so.
- 2.69 Initially, some suppliers put in low tenders for the contracts that, in hindsight, did not necessarily reflect the work needed for example, in setting up and administering the contract. This is known as under-tendering. Although under-tendering resulted in reduced costs for the Agency, it might have encouraged suppliers through their contract teams to focus on reducing costs rather than on what is best value for money to maintain the network. Undertendering could also have a significant negative effect on the relationship between the Agency and the supplier.

- 2.70 In 2015/16, the Agency changed its procurement method from suppliers nominating a price (called the "price quality method") to the Agency setting the price for tenders (called "purchaser nominated price") to reduce the risk of suppliers under-tendering for the contracts.
- 2.71 We looked at the contract teams' relationship survey results to better understand how under-tendering affected relationships in the contract teams. For 2018/19, we found contracts that used the "purchaser nominated price" had either the same or better average scores than contracts that used the "price quality method".
- 2.72 Other trade-offs include:
 - deferring renewals, which might be appropriate but could create a long-term risk to the condition of state highways (see paragraphs 3.7 to 3.23);
 - some performance measures and indicators encouraging behaviours contrary
 to the Agency's expectations for example, Agency staff told us that some
 suppliers are not doing as much preventative maintenance as they should
 because they are focusing on reactive maintenance to meet performance
 measures; and
 - a loss of technical expertise because of changes in the role of consultants.
 For example, consultants used to be responsible for asset management and managing contractors. Now these roles have been spilt between the Agency and suppliers. To reduce costs, the level of resourcing changed. However, this came at a cost to the level of capability available to suppliers and the Agency.
- 2.73 The Agency has taken steps to reduce the adverse effects of these decisions. For example, in the latest round of contracts, the Agency had clearer requirements for suppliers to demonstrate that they have access to the technical expertise that consultants used to provide.

3

Risks could be better managed

- 3.1 In this Part, we look at how the Agency manages strategic risks. We discuss:
 - performance data and what it suggests about overall road condition;
 - risks to market competition that have not eventuated; and
 - the need for the Agency to better monitor strategic risks.
- 3.2 We expected the Agency to identify and manage the main risks to it achieving the benefits and outcomes it expected from maintaining state highways through the Network Outcomes Contract model. We also expected the Agency to have a good understanding of, and monitor, the strategic risks to maintaining the state highway network.
- 3.3 By identifying and monitoring the strategic risks, the Agency can take steps to reduce the likelihood of these risks to the safety, reliability, and resilience of state highways.

Summary of findings

- 3.4 Although the Agency has a national risk register that brings together some reputational and operational risks, it could do more to aggregate the risks each contract team identifies into a national view. This could help to identify strategic risks to the effectiveness and efficiency of the Network Outcomes Contract model.
- 3.5 We recommend that the Agency identify, mitigate, monitor, and report on the strategic risks in maintaining the state highway network.
- During our audit, we identified three strategic risks to the Agency properly maintaining state highways that it needs to monitor and manage. These are:
 - maintaining road condition (see paragraphs 3.7 to 3.23);
 - ensuring market competition (see paragraphs 3.24 to 3.35); and
 - retaining the right capability and capacity to manage the contracts (see paragraph 4.18 to 4.21).

Risks to maintaining the road condition for the long term

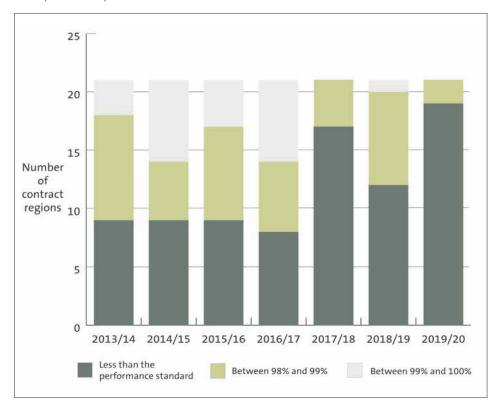
3.7 We asked Agency staff, suppliers, local council staff, and subcontractors about changes in the condition of state highways since the Agency introduced the contracts. Most thought the condition of the roads had worsened or was about to become worse.

- 3.8 We also wanted to understand what road users thought about the condition of the state highways so we talked to representatives from the Road Transport Association New Zealand and the New Zealand Automobile Association (the AA). Both representatives said that the condition of state highways has worsened over time. One remarked that roads that have high use have more wear and tear and that the roading surface breaks down more regularly than in the past.
- 3.9 The AA also gave us the results of a March 2019 survey of its members and feedback from all 17 AA districts. The survey found that about 28% of AA members thought road quality was either poor or substandard. Potholes on the roads was the second most common roading concern for AA members.
- 3.10 Most AA districts reported that the condition of state highways in their district was getting worse. This affects car maintenance, including windscreen damage from loose chip seal and damage to tyres and suspension from potholes.
- 3.11 We analysed the Agency's road condition data for state highways against the Agency's annual performance measures for the outcomes of safe stopping (measured by looking at skid threshold and surface texture), smoothness (measured by looking at the smoothness of travel on state highways), and network resilience (measured by looking at rutting).
- Our analysis shows that the state highways covered by the contracts have mostly met these road condition indicators, but there are early signs that the road condition of some state highways is worsening.
- 3.13 Figure 9 shows that the number of contract regions meeting the Agency's annual performance measure for the percentage of travel on state highways above skid threshold has decreased overall since 2013/14.9
- The Agency told us that increased traffic volume can affect performance against this measure, and that it manages the risk to this aspect of road condition by using skid threshold indicators to prioritise investment.

⁹ Different road conditions can affect the distance required for a braking vehicle to stop. In 2017/18, 17 contract regions did not meet the performance measure for good skid threshold. Agency-commissioned research found that this increase was caused by the unusually hot summer in 2017/18, rather than any decrease in the condition of the road.

Figure 9
Number of contract regions meeting the standard for the percentage of travel on state highways above the skid threshold, from 2013/14 to 2019/20

The bar chart shows that, over the last seven years, an increasing number of regions are below the expected 98% performance standard.

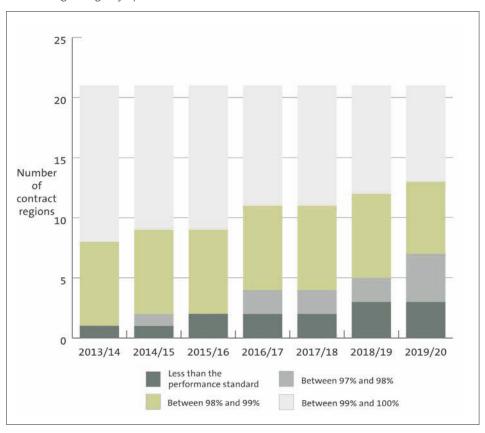


Source: Office of the Auditor-General, using data from the New Zealand Transport Agency.

3.15 Similarly, Figure 10 shows the number of contract regions meeting the Agency's annual performance measure for the percentage of travel on state highways classed as smooth. Although most contract regions are meeting this measure, since 2013/14, the performance of some contract regions has declined.

Figure 10
Number of contract regions meeting the measure for percentage of travel on state highways classed as smooth, from 2013/14 to 2019/20

The bar chart shows a slow increase in the low number of contract regions where performance is not meeting the Agency's performance standard of 97%.



Source: Office of the Auditor-General, using data from the New Zealand Transport Agency.

- 3.16 Most contract regions are meeting the Agency's annual road condition measure for the percentage of rutting more than 20 millimetres over the state highway network. However, the results also show a declining trend.
- 3.17 The number of contract regions meeting the Agency's annual measure for the percentage of network meeting surface texture standards has generally been the same from 2013/14 to 2019/20.
- 3.18 Several factors contribute to a worsening road condition. The Agency told us that previously it was over-investing in the condition of the network and exceeding performance targets. The Agency said that some of the reduction in the condition of the state highway network was anticipated, and a result of its new approach to

maintenance and renewals (discussed in paragraphs 2.45 to 2.55), which is now more focused on investing at the right time, in the right place. The new approach led to the Agency deferring some renewals. Because the number of roads resurfaced or rehabilitated has decreased, suppliers are doing more patching repairs. This results in the roads being rougher.

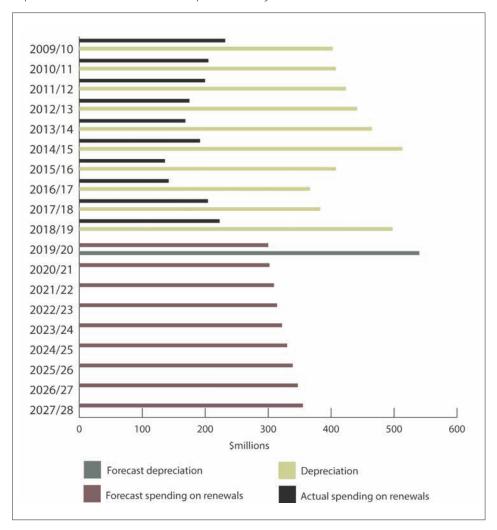
3.19 Another factor is the Agency implementing the One Network Road Classification. This put all roads into different classes. Some of the performance measures and indicators in the contracts are based on the reclassification of roads. For example, depending on the road classification, contract teams can have up to six potholes that are more than 150 millimetres wide on a five-kilometre section of road and still meet minimum standards under the current contracts. These measures can influence some decisions that the contract teams make (for example, on the timing of maintenance activities), and do not necessarily align with the expectations of road users. For some state highways, this has meant changes to the standard of maintenance.

Need to ensure enough investment in renewals

- 3.20 We are concerned that the Agency appears to be spending less than depreciation on renewals. This could affect the condition of state highways in the long term. Depreciation is an estimate of the portion of the asset that was "used up" during the year, and we would normally expect the rate of renewals to match the rate of depreciation. Figure 11 shows that, between 2009/10 and 2018/19, the Agency has consistently spent less on renewing state highways than depreciation. This is expected to continue for the foreseeable future.
- 3.21 The gap between spending on renewals and depreciation could indicate that the state highway network is wearing out faster than the Agency is renewing it.

Figure 11
Actual and estimated spending on renewals compared with depreciation, from 2009/10 to 2027/28

The bar chart shows the Agency has consistently spent less on renewing state highways than depreciation, and forecasts show this pattern is likely to continue.



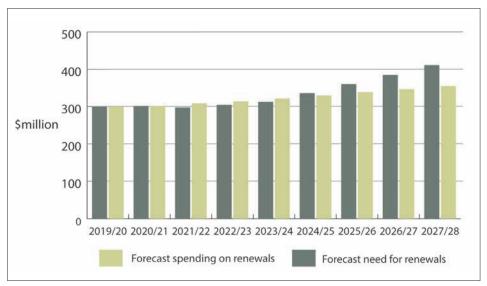
Source: Office of the Auditor-General, using data from the New Zealand Transport Agency.

Note: The New Zealand Transport Agency does not have a formal 10-year forecast for depreciation.

3.22 The Agency's own forecasts in Figure 12 show an increasing gap between the level of renewals needed and the Agency's budgeted spending on renewals from 2024/25 onwards. The Agency is allocated funds for its activities through the Government Policy Statement on Land Transport and the National Land Transport Plan. This determines how much it can invest in renewing and maintaining state highways. The Agency has highlighted that additional investment in the network will be required as part of developing the next Government Policy Statement on Land Transport.

Figure 12
New Zealand Transport Agency's forecast need for renewals, and budgeted spending on renewals, from 2019/20 to 2027/28

The bar chart shows a slowly widening gap from 2024/25 onwards between the forecast need for renewals and the forecast spending on them.



Source: Office of the Auditor-General, using data from the New Zealand Transport Agency.

3.23 Although the Agency needs to balance network investment with ensuring appropriate road condition, if the projections are soundly based and nothing changes, the condition of state highways will get worse over time. In our view, the Agency needs to actively manage this risk and ensure that it is investing enough in renewals to maintain state highways that are safe, reliable, and resilient.

Risk to market competition has not eventuated

One of the main risks identified when the Agency introduced the Network
Outcomes Contract model was the potential for market competition to decrease because the contracts were larger and for a longer term. The risk was that the

Agency would end up relying on a small number of suppliers to maintain state highways and that other companies would not be able to compete for the contracts. Eventually, the Agency could pay more to maintain state highways because of a lack of competition.

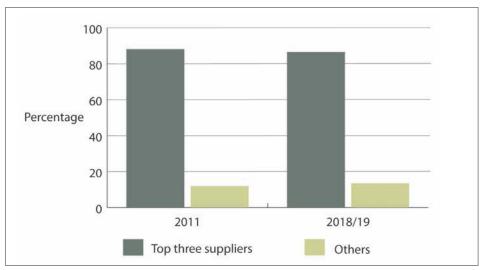
3.25 Based on the information we have available, the risk to market competition from introducing the contracts has not eventuated. The Agency has achieved its market competition goals and suppliers, through their contract teams, are meeting their requirements to support subcontractors. However, the risk remains, and we consider that the Agency needs to continue to monitor it.

Market competition goals have been achieved

- 3.26 When the Agency introduced the new contracting model, it wanted to encourage more competition in the maintenance and operations market. At the time, the Agency had two main suppliers for physical works on the state highways and one main supplier for professional services. The Agency's goals were:
 - at least four suppliers, with two or more contracts each, representing roughly 10% by value of the total maintenance and operations budget for state highways;
 - at least three tenderers for each contract; and
 - a minimum of three professional consultants involved in three or more contracts each.
- 3.27 The Agency has achieved these goals. Currently, four suppliers have two or more contracts (including the alliance contract to maintain state highways in Auckland) and two suppliers have one contract each.
- 3.28 From 2013 to 2019, the Agency received three or more tenders for more than 80% of the contracts awarded. This means the Agency received its desired number of tenders for most of the contracts. We have also identified that at least three professional consultants were involved in three or more contracts and one was involved in two contracts.
- 3.29 To understand changes in the market, at a high level, we compared the market share of the top three suppliers of state highway maintenance and operations work in 2011 and our estimated market shares for 2018/19 (after all the contracts had been awarded).¹⁰
- 3.30 As Figure 13 shows, the market share of the top three suppliers has not changed significantly. This suggests that the larger suppliers are not becoming more dominant in the market.

Figure 13
Market share of the top three suppliers in 2011 and 2018/19

The bar chart shows that the top three suppliers had a little under 90% of the market share in 2011, and this had barely changed by 2018/19.



Source: Office of the Auditor-General, using data from the New Zealand Transport Agency.

Note: When analysing the market share, we have credited the supplier that holds the maintenance contract with the full spending for all activities.

Suppliers are meeting their requirements to support subcontractors

- 3.31 The Agency took several actions to reduce the market competition risk, including:
 - allowing professional consultants and suppliers to be involved in more than one bid for each contract but to be the lead in only one bid;
 - requiring each bid to provide work for subcontractors up to a minimum level depending on the road maintenance market for each contract, with a default minimum of 20%;
 - requiring suppliers to state how they will support a competitive market as part
 of the bidding process for example, by helping subcontractors become prequalified so they can bid for larger contracts; and
 - monitoring market behaviour and competition during the tender phase, including sustainability of tender pricing and effects on market share.
- 3.32 Through their contract teams, suppliers are meeting the Agency's requirements to support subcontractors. We reviewed the percentage of work suppliers subcontracted. For 2016/17 and 2017/18, the contract teams have subcontracted more than the 20% minimum required by the Agency.

- 3.33 For the same period, we identified only one instance where a contract team did not subcontract the minimum overall percentage of work it pledged to.

 That contract team later received a poor performance score for the relevant key performance indicator.
- 3.34 The Agency also monitors suppliers' performance in delivering on their "healthy market" pledges through their contract teams. The pledges require suppliers to specify how much work they will give to subcontractors overall and how much they will give to specified subcontractors. The pledges also cover activities the supplier has said it would do to support a sustainable market, such as increasing the capability of subcontractors.
- Our analysis of the key performance indicator results show that many suppliers are meeting the healthy market pledges and contributing to a healthy subcontractor market for road maintenance.

Strategic risks need to be better monitored

- Currently, each contract team (made up of staff from the Agency, suppliers, and subcontractors) identifies and manages risks to the state highways in their region, and risks to the success of the contract. For example, the West Waikato North contract team identified the risk of increased maintenance demand because of the premature failure of the pavement or road surface.
- 3.37 The Agency has a national risk register that brings together some reputational and operational risks. However, the Agency could do more to aggregate the strategic risks each contract team identifies into a national view, and to cover strategic risks to the effectiveness and efficiency of the Network Outcomes Contract model. By more systematically identifying and monitoring strategic risks, the Agency can reduce the likelihood of those risks affecting the safety, reliability, and resilience of state highways.

Recommendation 2

We recommend that the New Zealand Transport Agency identify, mitigate, monitor, and report on the strategic risks from maintaining the state highway network to reduce the likelihood of those risks affecting the safety, reliability, and resilience of state highways.

3.38 During our audit, the Agency formed a Maintenance Contracts Governance Group to help improve its oversight and management of strategic risks for all maintenance contracts. The Agency told us that the Maintenance Contracts Governance Group has been structured to measure and report on strategic risks to the Agency and the industry, including resource, funding, market competition, and performance.

4

Contracts are not yet fully collaborative

- 4.1 In this Part, we look at the collaborative intent of the Network Outcomes Contract model. We discuss:
 - how the formal contract groups are beginning to work together effectively;
 - some processes that undermine the model's collaborative intent; and
 - that the Agency does not measure and report on its own performance.
- 4.2 The Network Outcomes Contract model emphasises a strong collaborative and partnering relationship between the Agency and suppliers to achieve the contract outcomes.
- 4.3 Figure 14 shows the 10 crucial elements, as described by the contract, which underpin this relationship.

Figure 14
Elements of a collaborative relationship

Element	Description
Trust	An environment of mutual trust.
Empowerment	Individuals are empowered to deliver outcomes rather than controlled through the process of delivering them.
Honesty	Honesty in all dealings.
Openness	An environment where each part communicates freely in an open manner on all issues.
Co-operation	An environment of mutual co-operation.
Fair	All issues to be considered with fairness to the parties involved.
Courageous	Looking for innovative solutions to achieve specified outcomes.
Unconstrained	Requirements specified should not be considered as constraints.
Respect	The capabilities, knowledge, and functions of the parties to be respected.
Reasoned requirements	Wherever possible, requirements communicated to either party will specify the reason for the requirement.

Source: New Zealand Transport Agency.

4.4 These behavioural elements are expected to be applied to processes that support the contracts. Agency staff and contract teams need to work together to give advice and deliver maintenance work. The parties depend on each other. For example, the Agency approves renewals, within the limits agreed at tender, which influences the amount of routine maintenance work the contract team needs to do. The contract team decides on the routine maintenance work, in line with its maintenance management plan, which can influence how often renewals are needed.

- 4.5 On average, the contract teams that receive "outstanding" on their overall performance assessment tend to score highly on the health of the relationship surveys. These surveys collect responses from suppliers, subcontractors, and members of the Contract Management Teams and Contract Boards (including Agency staff).
- 4.6 We expected the Agency to manage the contracts effectively, by maintaining effective relationships with suppliers. This would contribute to maintaining state highways effectively and efficiently.

Summary of findings

- 4.7 The Contract Management Teams and the Contract Boards have become more effective over time. They provide the formal channels for managing the relationship between the Agency and suppliers.
- 4.8 Relationships between the Agency's regional staff and the contract teams were mostly effective. However, the Agency needs to continue to focus on ensuring that it has the right capability and capacity to support effective relationships.
- 4.9 Some processes have undermined the collaborative intent of the contracts. We recommend that the Agency review the roles and delegations of the parties involved in the contracts so that they are clearly understood and support collaborative processes between the Agency and suppliers.
- 4.10 Other factors that can influence the relationship include whether the supplier has adopted a stewardship approach to the network (see paragraph 4.34), whether they follow the required plans, and the pricing for the contracts (see paragraph 2.69 to 2.71).
- 4.11 To support changes in behaviour that match the collaborative intent of the model, the Agency was to monitor and assess its performance and report this to the Contract Boards. This has not happened. We recommend that the Agency measure and report its performance in supporting the contract teams so it can identify opportunities to improve and be held to account for its performance.

Formal contract groups are beginning to work effectively

- 4.12 The formal contract groups have become more effective over time, leading to better leadership and guidance of the contract teams. Two groups are responsible for managing and governing the contracts:
 - the Contract Management Teams, which are responsible for the day-to-day management and leadership of the contract teams; and
 - the Contract Boards, which are responsible for providing joint governance of the contracts.

- 4.13 The Contract Management Teams meet monthly to review each contract team's performance, risks, progress against delivering the work programme, and the results of audits. We received feedback that the Contract Management Teams are reasonably effective. They are improving their ability to remain focused on leading and guiding the contract rather than get too much into the operational detail.
- 4.14 The Contract Boards meet every four months to review reports by the relevant Contract Management Teams. The Contract Boards consider and review the performance of the contract teams, risks, the relationship between Agency and supplier staff, and any other issues.
- 4.15 Generally, people considered that the Agency merging some Contract Boards increased the value of the Contract Boards. This enabled them to focus on themes and promote sharing of experiences and perspectives between the contract teams, rather than get into the operational detail of each contract.
- 4.16 The increased effectiveness of the formal contract groups means that they can provide better leadership and guidance to the contract teams. However, there are opportunities for them to improve.
- 4.17 We expect the Agency to consider the roles and responsibilities of these groups as part of its response to Recommendation 3 (see paragraph 4.35). This would help the Agency to identify any opportunities to improve the groups' effectiveness so that they better support the collaborative intent of the contracts.

Need to manage the risk to capability and capacity

- 4.18 Outside of the formal contract groups, Agency and supplier staff maintain regular contact to resolve any issues or to progress any needed work. In practice, the Agency and suppliers rely heavily on the people employed as Maintenance Contract Managers and Contract Managers as the primary points of contact for each organisation to maintain effective relationships.
- 4.19 In the contracts we looked at, relationships between Agency regional staff and suppliers were mostly effective. Behaviours such as openness, trust, and understanding each other's motivations support an effective relationship.
- 4.20 However, we are aware of instances where this relationship has not been effective. For example, one of the parties felt that the other was not acting in an honest and fair way. In this instance, the Agency and supplier intervened to resolve the issue.
- 4.21 To date, the Agency has done limited succession planning to ensure that it has people with the right skills and who can demonstrate the relationship elements

described in Figure 14 in the main contract management roles. This is a risk to the Agency's ability to maintain effective relationships and retain institutional knowledge.

Some processes undermine the model's collaborative intent

- 4.22 Suppliers and Agency staff told us that some processes constrain the ability for them to collaborate. In our view, this has also contributed to a perception from suppliers that they did not see the collaborative intent of the contract reflected in decisions that are ultimately made outside of the core contract team.
- 4.23 There is an inherent tension between the Agency wanting ownership of the state highways and national consistency, and it working in partnership with suppliers to do what is best for the state highway network. Over time, the Agency has asserted more control over the contracts and its regional staff, at the cost of collaboration with suppliers.
- 4.24 We saw this in how each contract team's work programme is decided and the process for assessing the contract team's performance. As discussed in paragraphs 2.45 to 2.67, the Agency has benefited from changes to these processes. These benefits include getting greater understanding of the need for proposed renewals, a more nationally consistent process to identify and approve those renewals, and being able to compare and contrast the contract teams' performance. However, some aspects of these changes have also undermined the collaborative intent of the Network Outcomes Contract model.
- 4.25 The Agency has centralised funding decisions, which has led to reduced delegation of decision-making to the Agency's regional teams (see paragraphs 2.45 to 2.55). We acknowledge that delays in getting funding approvals can be a result of the contract teams not providing relevant data or not properly identifying renewals. However, the reduced delegation of decision-making authority to regional teams has also contributed to delays in getting funding approvals.
- 4.26 When these delays occur, they can significantly affect:
 - collaboration between the Agency and suppliers;
 - the contract teams securing the necessary resources to deliver the work; and
 - the ability of contract teams to identify and realise potential efficiencies, such as combining work with the Agency's other programmes.
- 4.27 The Agency is making changes to its annual planning process, including changing to a three-year plan to allow more flexibility for contract teams and the Agency's regional staff to move work within funding brackets. This might help reduce some of the issues we have identified.

The performance assessment process can cause frustration

- 4.28 The Agency needs to assess performance consistently so that all contract teams are treated fairly. Equally, because the performance assessment had relied on contract teams auditing themselves and reporting their performance, they are obliged to provide the Agency with reliable and relevant information.
- 4.29 In 2015/16, the Agency introduced a moderation process to help it apply self-assessment scores consistently to all contracts (see paragraph 2.63). However, we identified several issues with the Agency's moderation process that have led to frustration, risking undermining the collaborative intent of the contracts. These issues include:
 - a perception that Contract Boards are not adequately involved when changes are made to the performance scores, despite its governance role over the contracts – in particular, where a Contract Board has accepted a contract team's mitigating circumstances that the Planning and Performance Team subsequently does not accept;
 - accepting performance that does not appear to meet the intent of the
 performance indicators for example, the Agency allowed one contract to
 include spending on accommodation providers and local tearooms as part of
 meeting the key performance indicator to award a minimum amount of work
 to subcontractors:¹¹
 - providing limited feedback to contract teams and a lack of transparency of changes to individual scores for each reporting period; and
 - a lack of timeliness in receiving the moderated results means contract teams have little opportunity to make changes before the next reporting period.
- 4.30 Suppliers and Agency regional staff told us that they received minimal feedback from the Planning and Performance Team about why their contract team's performance scores had changed or how they could improve their performance results.
- 4.31 Contract teams also told us that they spend significant time and effort in collating and reporting on the current performance measures and indicators. Some suppliers and Agency staff questioned whether the effort in reporting against the performance measures and indicators is worthwhile.
- 4.32 As part of the latest round of contracts, the Agency has decreased the number of performance measures and indicators, which the Agency expects will reduce the time and effort the contract teams need to collate and report on their performance. For example, changes to the key performance indicators mean that the Agency can measure them, rather than relying on the contract teams for the relevant information (see paragraph 5.23).

- 4.33 These issues with the performance assessment process have led to tension and frustration. For example, some suppliers and Agency regional staff said they felt that the Planning and Performance Team was looking for reasons to reduce the contract team's performance score and not taking local circumstances into consideration.
- 4.34 Most of the issues we identified with the processes come from the Agency asserting more control over the contracts than it originally intended, potentially undermining the collaborative intent of the contracts. The Agency told us that it initially expected a high level of network stewardship from suppliers. This was reflected in the commitments made by suppliers in their tenders. However, this expectation has not been met in the delivery of some contracts, leading to the Agency asserting more control to ensure that its expectations are met.
- 4.35 In our view, now that the Agency and suppliers better understand what the contracts involve, the Agency needs to reconsider the roles and delegations of people and groups involved in the contracts so it gets the right balance between national consistency and working in partnership with suppliers. This will also help the contract teams reduce delays and achieve better programming of work.

Recommendation 3

We recommend that the New Zealand Transport Agency review the roles and delegations of the parties involved in the Network Outcomes Contracts to ensure that they are clear and support collaborative processes between the Agency and suppliers.

- 4.36 The Agency agreed that there needs to be more empowerment but that this needs to be balanced with national consistency. The Agency said that forming the Maintenance Contracts Governance Group enables decisions by the Contract Boards to be more efficiently elevated to the right decision-maker.
- 4.37 The Agency told us that it has also established, through the Industry Liaison
 Management-Maintenance, a cross-industry working group to improve the way that
 suppliers and the Agency collaborate. To date, issues planned to be addressed include:
 - providing training to Agency and supplier staff to give people the skills to collaborate;
 - · changing the way Contract Boards operate; and
 - on an ongoing basis, measuring collaboration as part of assessing the relationship between Agency and supplier staff.

The Agency has not measured and reported its own performance under the model

- 4.38 The performance measures and indicators for the contracts focus on the supplier's performance, through its contract teams. However, there are no performance measures and indicators focused on the Agency's performance. Having such measures would allow the Agency to identify opportunities to improve its own performance. It would also provide transparency to suppliers and help hold the Agency to account.
- 4.39 Under the first round of contracts, to assess the performance of suppliers and the Agency equally, the Agency's performance was to be assessed and reported to the Contract Boards. This would support changes in behaviour that match the collaborative intent of the Network Outcomes Contract model.
- 4.40 To date, this has not happened. Some suppliers told us that they feel that the current performance measures and indicators do not recognise the obligations of the Agency to support the contracts. We also heard that the influence of the Agency's actions on the contract's performance is not recognised.
- 4.41 In 2018, two reviews highlighted that the performance measures and indicators did not focus on the Agency. One review stated that the next round of contracts represented an opportunity to make a step change in the maturity of the relationship and the model by measuring and reporting the performance of the Agency.
- 4.42 We agree that the conclusion of the current round of contracts provides the Agency with an opportunity to prepare an approach to measuring and reporting its own performance under the model. Implementing this in the second round of contracts would help the Agency to learn from its performance and make improvements or adjustments.

Recommendation 4

We recommend that the New Zealand Transport Agency measure, assess, and report its own performance in supporting the Network Outcomes Contracts, as intended, so it can identify opportunities to improve and be held to account for its own performance.

4.43 The Agency told us that it intended to use the collaboration measure in paragraph 4.37 to establish how effectively it currently supports the contracts. It then intends to prepare a framework to monitor its performance, with the Maintenance Contracts Governance Group reviewing the Agency's performance annually.

- In this Part, we look at how the Agency identifies, shares, and applies lessons. We also discuss the latest round of contracts.
- 5.2 Effectively identifying and applying lessons learned from the Network Outcomes Contract model can help the Agency to continuously improve how it operates and the results it achieves.
- 5.3 We expected to see evidence that the Agency identifies, shares, and applies lessons from managing the contracts.

Summary of findings

The Agency has learned some lessons and applied some, including to the latest round of contracts. However, this has been limited because the Agency has not assessed the benefits from introducing the Network Outcomes Contract model or measured its own performance.

Some lessons have been learned and applied

- The Agency has learned and applied some lessons to improve the effectiveness and efficiency of maintaining state highways. It is also making changes that could help it more systematically apply lessons.
- The Agency uses reviews, such as the Contract Management Reviews and benchmarking of the performance results, to learn lessons. Some of the lessons that have been identified include:
 - ensuring that suppliers will have access to Agency personnel when they need it;
 - improving succession planning for the Agency and suppliers;
 - better tracking and recording of a contract team's non-compliance with contract plans; and
 - reviewing the incentives for preventative maintenance.
- 5.7 The contract documents also encourage suppliers and their contract teams to learn lessons. For example, post-construction design assessments check that roads have been built to an acceptable standard.
- We saw examples of contract teams doing reviews after completing renewals work and after responding to incidents, such as after ex-Cyclone Fehi hit the West Coast in early 2018. Doing these reviews supports continuous improvement in how the contract teams maintain state highways.
- 5.9 Both the Agency and suppliers with multiple contracts have established forums that allow their staff to learn and share lessons. The Contract Boards also help to share lessons between contracts run by the same supplier.

- 5.10 The Agency has set up other groups, such as the Industry Liaison Management-Maintenance, to learn and share lessons with suppliers. The Agency is working with the main suppliers in the Industry Liaison Management-Maintenance to establish six cross-industry work streams to identify and implement improvements in:
 - safety;
 - people;
 - sustainability;
 - · systems;
 - · innovation; and
 - · collaboration.
- 5.11 The Agency can use information from these groups to make any necessary changes, including issuing clarifications on how to interpret the requirements of the contract or guidance.
- The Agency uses the contract teams' annual performance workshops and Contract Board meetings to provide specific feedback to suppliers and contract teams. For example, the Planning and Performance Team presented on themes from the Contract Management Reviews at the Hawke's Bay contract team's 2017/18 annual performance workshop. This feedback from the Agency can help to focus contract teams on what they need to do to improve their performance.
- 5.13 In response to lessons learned, the Agency has clarified and changed the standard conditions of contracts and changed its processes, such as the annual plan process. The contract teams have also applied lessons learned, including innovations and changes in response to the Contract Management Reviews. For example, the North Canterbury contract team introduced a new tool to track the main tasks in each period and who is responsible for completing them.
- 5.14 The Agency's newly created Maintenance Contracts Governance Group is responsible for implementing recommendations and improvement from reviews and audits. The Maintenance Contracts Governance Group is expected to help the Agency apply lessons more systematically.

Room to improve how lessons are learned and shared

Although the Agency has done a lot of work to apply specific lessons, in our view, it needs to take a more comprehensive view of how the Network Outcomes

Contract model is operating. It could also share lessons and innovations more effectively.

- 5.16 The Agency's ability to identify lessons has been limited because it does not:
 - measure and report on the benefits and outcomes from the Network Outcomes Contract model (see Part 2); and
 - measure and report its own performance under the Network Outcomes Contract model (see Part 4).
- 5.17 We have made recommendations for the Agency to address these limitations.

 Doing so should provide the Agency with valuable insights into its performance and the improvements it could make.
- 5.18 We asked Agency staff and contract teams about how well lessons were identified, shared, and applied. Generally, people thought that they had several ways to identify and share lessons and that they found them useful. However, they identified some weaknesses, including:
 - a lack of opportunity to meet staff from the Agency and other contract teams and share lessons learned:
 - innovations could be shared better between the contract teams; and
 - the Agency could share lessons more with suppliers, and the Industry Advisory Group could be more effective in this role.
- 5.19 In our view, the Agency could usefully investigate further opportunities to enable contract teams and Agency staff to share ideas, problems, and challenges with each other.
- 5.20 The Agency agreed that the groups available to share lessons could be more effective. It has recently recruited five Principal Network Managers throughout the country. Their role is to recognise and promote best practice among all Agency staff responsible for managing state highways.

Changes made to the latest round of contracts

- 5.21 In 2018/19, the Agency made changes during the latest round of contracts, including documentation and specifications, reviewing the performance measures and indicators, and updating guidance.
- The Agency has used the results of reviews, such as the contract management review, to prepare for the latest round of contracts. It also ran various workshops with Agency staff, the Industry Advisory Group, and local authorities to get their views on what was and was not working.

- 5.23 The changes the Agency made to the latest round of contracts include:
 - clarifying the responsibilities of key roles and the Contract Boards;
 - changing the performance measures and indicators, including operational
 performance measures, key result areas, and key performance indicators, by
 reducing their overall number and introducing prerequisites. Changes to the
 key performance indicators also mean that the Agency can measure them
 internally, with the intention of reducing the burden on contract teams to
 provide the relevant information;
 - increasing the performance assessment periods for each financial year from three to four and scoring performance only once each year; and
 - changing how it calculates increases in contract terms.
- These changes should reduce some of the issues with the first round of contracts. However, the Agency and the industry agree that there are still issues in the latest round of contracts. These include the auditing of the operational performance measures and the amount of administration the contracts require.
- 5.25 In our view, the Agency needs to monitor these changes closely to ensure that they do not worsen existing issues (such as the timeliness of receiving performance assessment feedback) and affect the collaborative intent of the Network Outcomes Contract model.
- To date, the Agency has completed tenders for Marlborough and Taranaki using the new contract. The Agency told us that it intends to review how the latest contracts are working. This should allow the Agency to consider whether the changes to the contracts are helping to reduce some of the issues with the first round of the contracts, to identify any unintended consequences, and to make any necessary changes.

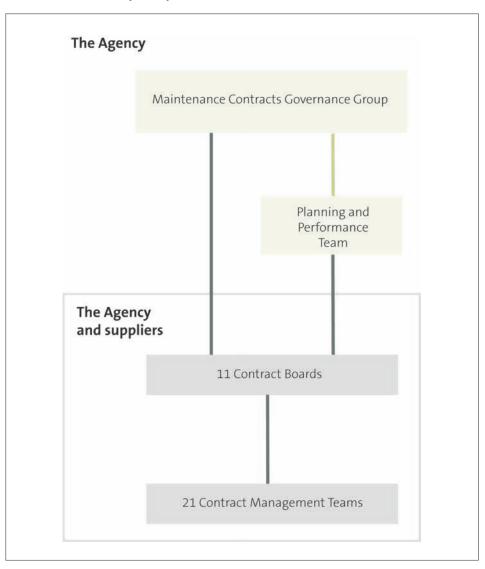
Appendix

Main groups and relationships involved in Network Outcomes Contracts

As Figure 15 shows, the governance and management structure for the Network Outcomes Contracts includes:

- · two Agency-only groups; and
- two formal contract groups with representatives from suppliers and the Agency.

Figure 15
Structure of contract participants



Source: Office of the Auditor-General.

Main members of the Contract Management Teams

The Contract Management Team consists of representatives from the supplier and the Agency.

The Maintenance Contract Manager is responsible for administering the contract, ensuring that the outcomes of the contract are delivered, and representing and treating both parties in a fair and professional manner. They are the main link to promote and ensure healthy working relationships between both parties.

The Senior Network Manager/Network Manager is responsible for ensuring that state highways meet the levels of service defined by the One Network Road Classification. They are also responsible for planning and delivering improvements works and needs for the state highways. Their role includes forward works planning, the performance of assets, state highway operations, and resilience/risk management.

The Contract Manager is responsible for the overall management and delivery of the contract on behalf of the supplier. This includes ensuring that the contracts meet the requirements of the Agency, managing internal and external relationships, and supporting continuous improvement.

The formal contract groups

Each contract has a Contract Board made up of two to three representatives from the supplier and the same number from the Agency. Their roles include objective performance monitoring, resolving conflicts, compliance, and providing governance over risks and the health of the relationship between all participating parties.

The Contract Management Team is responsible for the day-to-day management and leadership of the contract team to ensure that the contract outcomes, including operational performance measures, key result areas, and key performance indicators, are considered, the relationships within the team (and externally) are effective, and contract risks are appropriately managed.

For all contracts

The Planning and Performance Team is responsible for developing and finalising results against the performance measures and indicators for the contracts, commissioning audits of the contracts, and for approving work programmes.

The Maintenance Contracts Governance Group consists of representatives from the Agency. Its role is to provide assurance that the Agency's maintenance activities are achieving value for money and risks are well managed.

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Office of the Auditor-General PO Box 3928, Wellington 6140

Telephone: (04) 917 1500

Email: reports@oag.parliament.nz Website: oag.parliament.nz