

Maintaining the State Road Network – Follow-on Audit

Report 13: June 2016

Executive summary

Introduction

In 2009 the Auditor General tabled a report titled *Maintaining the State Road Network*. The audit examined whether Main Roads Western Australia's (Main Roads) management of road maintenance had been efficient and effective.

The report concluded that the condition of the network had deteriorated since Main Roads contracted out its maintenance function, with the average age of the road increasing and inadequate levels of planned maintenance. It also found that better information was needed to inform Main Roads' decisions about where, when and what type of maintenance was needed to ensure cost effectiveness and reduce the significant backlog of overdue maintenance.

This follow-on audit provides an assessment of whether the condition of the state road network has improved and whether reasonable steps have been taken to address the problems identified in the first report. It also includes an assessment of whether Main Roads has addressed the 10 recommendations of the 2009 report (Appendix 1).

Background

Road construction and maintenance in Western Australia is the responsibility of either the state or local governments. The state government is responsible for roads classified as highways or main roads – cumulatively referred to as the state road network. Main Roads plans, builds and maintains the state road network on behalf of the state government (Figure 1).



Source: Main Roads

Figure 1: The state road network

Since our 2009 audit Main Roads has replaced its contract model for maintenance, moving from Term Network Contracts (TNCs) to Integrated Service Arrangements (ISAs).

Under the ISA model, private sector partners (Integrated Service Providers – ‘contractors’) are brought in to work with Main Roads to deliver road operational asset management, network operations and maintenance services delivery. Contractors and Main Roads regional staff work closely to plan and deliver maintenance, with oversight by Main Roads head office in Perth.

Main Roads introduced the ISA model between 2010 and 2011 to address some of the shortcomings of the TNC model, which were identified in our 2009 report. A key focus was regaining influence and control over planning and management of the road asset, which diminished during the TNC period.

Main Roads intends to change its contract model again in 2017. The design of the new model aims to increase the in-house managed component of maintenance.

Funding for the maintenance of the state road network was valued at approximately \$227 million in 2016-17. Works regarded as maintenance include road resurfacing, drainage and line-marking. By comparison, the building of a new road is as a capital works project. Some projects can have both maintenance and capital elements.

The context for maintaining the state road network changes over time:

- Since our last report the number of registered vehicles has increased by 18.5 per cent, which contributes to road wear and tear.
- The road network is growing. Since 2009, the size of the state road network has increased around 6% from 17,800 kilometres to 18,846 kilometres. Its value has grown by 31% over this period to more than \$46 billion.

Other factors also impact the budget and delivery timeframes for maintenance. Projects such as capital upgrades can influence maintenance positively. For example, if a road with an identified resurfacing need is instead rebuilt, maintenance (resurfacing) is no longer required and the overall quality and lifespan of the asset improves. Projects can also impact maintenance negatively. For instance, road diversions needed to enable capital upgrades or maintenance on a specific section of road can cause increased wear and tear on other sections of road.

Audit conclusion

The backlog of overdue maintenance on the state road network remains at similar levels to 2009, with an estimated total cost of \$845 million in 2016. The average age and the proportion of the road network past its design life has increased, with 46% of the network now over 40 years old compared with 32% in our 2009 report.

Overall, Main Roads’ approach to maintenance is still reactive, doing maintenance as it becomes critical. Targeted early intervention to prevent roads from needing more costly and extensive maintenance is limited. As the complexity and cost of maintenance increases, less can be done within the available funding, and so the backlog increases.

There have been some improvements. Recent additional investment in resurfacing some parts of the network to prevent further deterioration has helped Main Roads to curb growth in the maintenance backlog. Main Roads has also improved its collection of information about the cost and delivery of road maintenance activities, which allows it to monitor contractor performance more effectively.

However, Main Roads has not yet used this better information to shift its strategy from reactive to preventative maintenance. While funding levels and the need to conduct critical repairs are key considerations, without a change in strategy, there is a significant risk that road condition will deteriorate and the maintenance backlog will rise.

Key findings

The backlog of overdue maintenance on the state road network remains at similar levels to 2009, with an estimated total cost of \$845 million in 2016. Between 2010 and 2015, the maintenance backlog was around \$1 billion, but Main Roads expect this to fall to \$845 million in 2016 and then \$630 million by June 2017. Much of the expected reduction will occur from:

- instances where there is no longer a requirement for maintenance works to be done because the need has been addressed as part of a minor construction works and capital works projects. This removes the original maintenance costs from the backlog. For instance, where minor construction works address road shoulder repairs that were going to be treated and funded as part of the maintenance program.
- decreasing the level of services provided for maintenance activities such as vegetation clearance and litter collection, which contributed to a drop of over \$100 million in the past year.

In the 2009 report we found that 32% of main roads were older than the design life of 40 years. The proportion has now grown to 46%, with the average age of roads up from 33 years to 36 years. Main Roads also acknowledges that the estimated maintenance backlog does not include the full extent of road rehabilitation (rebuilding) needs. Main Roads regional offices do not comprehensively assess and report on the level of rehabilitation, as this need does not typically attract funding. Main Roads does not know the extent to which rehabilitation is underreported but estimates the gap between assessed need and actual need at approximately \$100 million.

Most of the maintenance on the network is reactive, done when it becomes critical. The available budget of \$227 million in 2016-17 was allocated to high priority needs, rather than balanced across lower priority needs to prevent them escalating and becoming more complex and expensive to fix. As complexity increases, so does cost resulting in less maintenance being done with the available funding. Main Roads is aware that preventative maintenance offers better value for money and prolongs the life of the network. However, it does not have a comprehensive strategy which balances the need to move to a preventative approach while still undertaking critical repairs.

Main Roads has made some progress towards a preventative approach by using additional funds to prioritise resurfacing which prevents further deterioration of the road. Between 2012 and 2016, Main Roads received additional funding of \$236 million to address the maintenance backlog. The funding was used for overdue resurfacing as well as new resurfacing needs, reducing the overall backlog value by \$78 million, and the average surface age by a year since 2010. Replacing the surface of a road in a timely way helps to improve the long-term performance of the road and extend the periods between major maintenance. However, Main Roads is yet to analyse the cost effectiveness of the focus on resurfacing and how this compares to other approaches.

Main Roads has improved its knowledge of the condition of the road network and the performance of its contractors. Corporate systems and tools introduced since our 2009 report provide Main Roads with information about the condition of the road asset, as well as maintenance costs and performance. In particular the Maintenance Management Information System (MMIS), implemented in 2014, brings road maintenance information into a single system and provides consistency for measuring and reviewing road condition and maintenance.

The current ISA model of contracting has improved Main Roads' levels of control over maintenance by involving staff directly in managing maintenance. This was not the case under the previous contract model (TNC). The ISA model also gives Main Roads a greater opportunity to monitor whether works are on time and budget, though the standardised performance indicators it uses to do this took almost 3 years to introduce. Main Roads is implementing a new contract model in 2017. Improvements made to monitoring under the ISAs need to be carried forward into the new model.

Recommendations

Main Roads should, by December 2016:

1. Formalise guidance to regions on assessing and prioritising maintenance needs.
2. Establish a consistent approach to calculating backlog to allow comparison over time.
3. Apply lessons learned from the Integrated Service Arrangements when developing and managing the new maintenance contracts,
4. Standardise the monitoring and evaluation of safety related maintenance tasks identified during crash investigations,
5. Identify the maintenance knowledge and skills needed by Main Roads and plan for how current and future gaps will be addressed.

Main Roads should, by July 2017:

6. Implement a comprehensive strategy to address maintenance backlog. The strategy should focus on minimising the whole-of-life costs of the network.