



Pavement Delivery System Review

Workstream 3: Procurement

PDSR Authors

1 November 2022

V1 Final

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Waka Kotahi NZ Transport Agency
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If you have further queries, call our contact centre on 0800 699 000 or write to us:

Waka Kotahi NZ Transport Agency
Private Bag 6995
Wellington 6141

This document is available on Waka Kotahi NZ Transport Agency's website at www.nzta.govt.nz

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1.0 Purpose of this Report

The ‘Review of State Highway Pavement Delivery’ report was communicated to the New Zealand Pavement Industry by Waka Kotahi in March 2020. This holistic and collaboratively sourced review examined the steps Waka Kotahi and the wider industry could take to improve their collective performance in the end-to-end delivery of new and rehabilitated pavement construction in New Zealand. The review was guided by Waka Kotahi’s value for money investment principle; *“the delivery of the right outcomes, at the right time, at the right cost and financed at the right level of risk”*.

Whilst the review was not expected to generate a fundamental change to systems and processes, it did identify areas where further focus, refinement and discipline would improve design, delivery and reliability confidence. Opportunities to improve, clarify and supplement existing pavement specifications, design processes and construction delivery were also highlighted. These opportunities were summarised within nine recommendations that were subsequently endorsed by Waka Kotahi. The recommendations of the Report are summarised in Figure 1.

“To review the current NZ Transport Agency end to end system delivery requirements for new pavement and rehabilitation construction and to assess these requirements in terms of best value for money to deliver on New Zealand’s land transport objectives.”

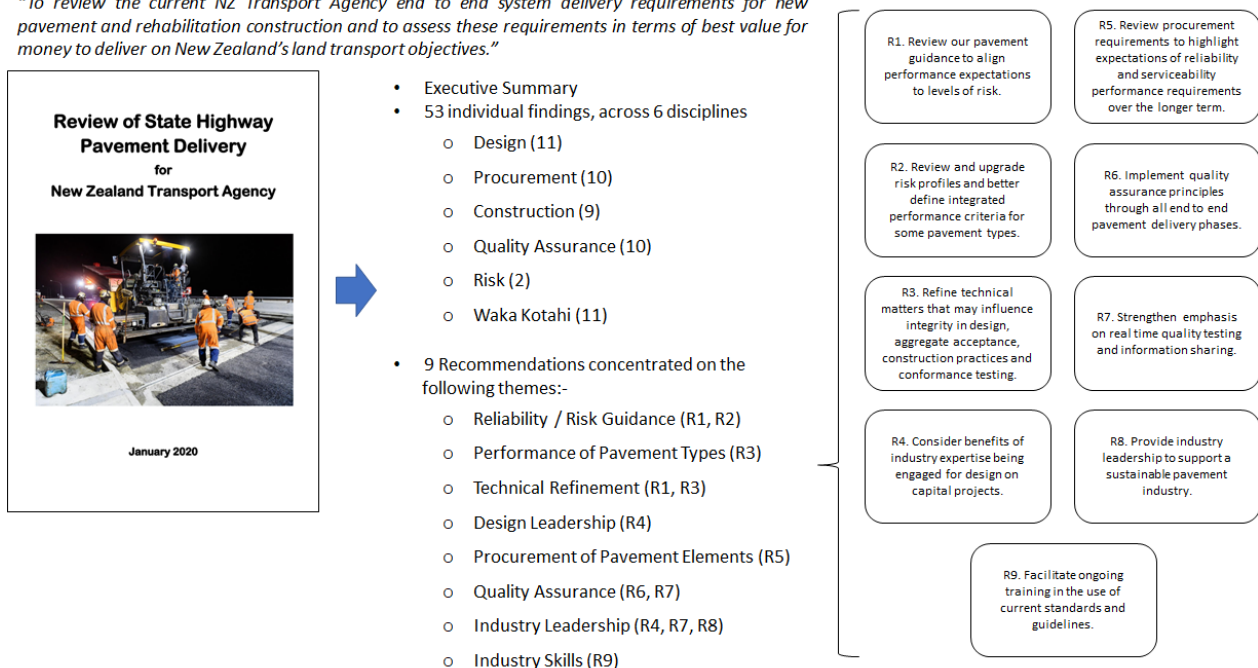


Figure 1: A summary of the outputs from the ‘Review of State Highway Pavement Delivery’ report.

An Industry Steering Group was then established to plan, resource and enable the implementation of the nine recommendations. The Industry Steering Group, shown in Figure 2, is chaired by Janice Brass of Waka Kotahi and is supported by senior industry representatives across its seven targeted Workstreams.

- Workstream 1 – Technical Matters
- Workstream 2 – Whole of Life
- **Workstream 3 – Procurement**
- Workstream 4 – Strategic Risks
- Workstream 5¹ - Z1 & Z8 Awareness
- Workstream 6 – Industry Capability
- Workstream 7 – Cross Industry Communications

¹ In June 2022, the Steering Group agreed to combine the outputs of a separate workstream, targeting improved awareness of Z01 and Z08 quality related documentation, into the scope of Workstream 5 – Quality of Project Delivery.

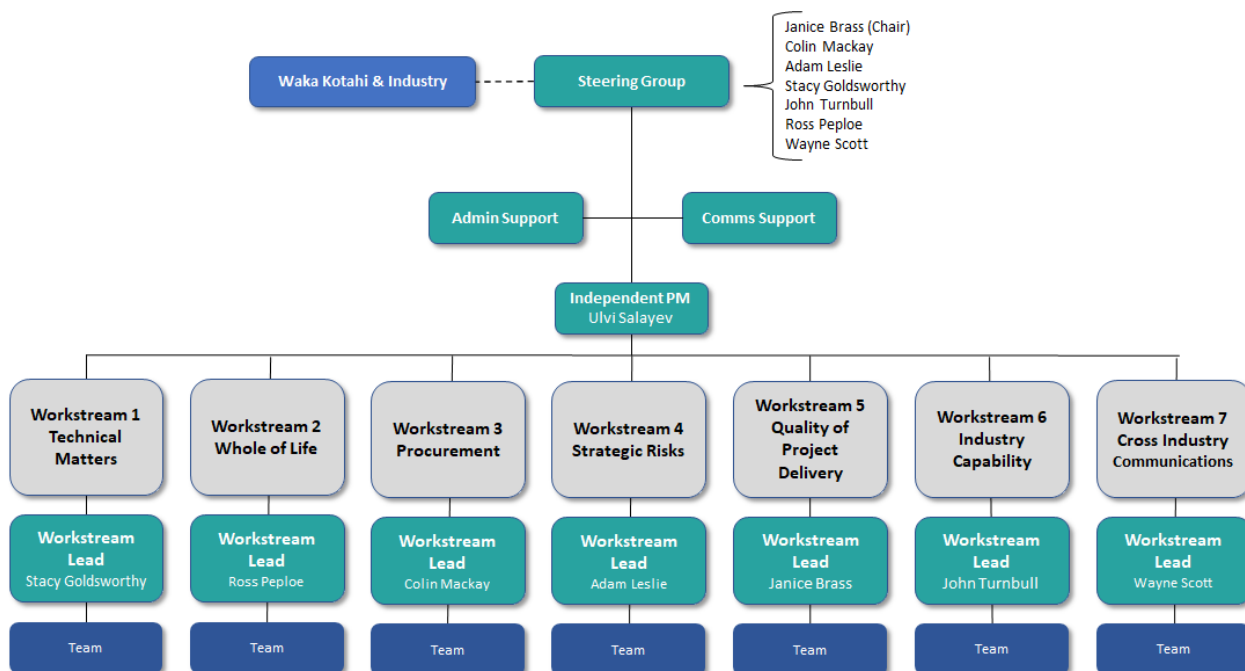


Figure 2: The structure of the Industry Steering Group, showing the Workstream 6: Industry Capability Team

The Workstream 3 Team were tasked to consider the Report’s Recommendations that targeted improvements related specifically to the ‘Review of procurement’, these being described in Table 2 below:

Ref.	Report Recommendation: Taken from the Recommendation statement on page 5 of the Report.
R5	Procurement of Pavement Elements: Review and refine procurement type and procedures to highlight the importance of pavement elements and encourage conforming quality delivery over the longer term.

Table 2: The Report recommendations investigated by Workstream 3.

2.0 Structure of this Report

This report contains a record of the work undertaken by the Workstream 3 Team. It is comprised of four sections and an Appendix. The section titles and their contents are described in Figure 3 below:-

Section Title	Content
1: Purpose of this Report	Describes the creation and purpose of the seven Workstreams operating under the Pavement Design System Review (PDSR) Steering Group.
2: Structure of this Report	Demonstrates the structure of the report, typically comprising background information, headline findings and Required Responses.
3: Executive Summary	Waka Kotahi commissioned Andy Wright Project Services Ltd to work with the Workstream 3 (Procurement) Team to develop and deliver a programme of improvement initiatives to address the findings of the 'Review of State Highway Pavement Delivery' report. The Executive Summary of the Andy Wright Project Services Ltd report is provided for reference in Section 3.
4: Required Responses	A summary of the Required Responses determined by the PDSR Steering Group, following their review of the Andy Wright Project Services Ltd report.
Appendix 1	A full copy of the Andy Wright Project Services Ltd report 'Influence of Procurement and Delivery Models on Pavement Performance' dated 21 July 2022 is provided in Appendix 1.

Figure 3: Report structure

2.1 Prioritisation of Required Responses

The Required Responses made by the Workstream 3 (Procurement) Team are presented in this report.

Given that each of the separate workstreams described in Figure 2 is challenged to produce its own report, and recognising that some considerations between these workstreams overlap, the decision has been made by the Steering Group to consider and prioritise the Required Responses as a whole, once all reports are complete. The full list of prioritised Required Responses, complete with the Implementation Plan describing their enactment, is provided within an overarching PDSR Steering Group Report, titled **PDSR Summary Report** which is accessible via this [link](#).

3.0 Executive Summary

Waka Kotahi commissioned Andy Wright Project Services Ltd to work with the Workstream 3 (Procurement) Team to develop and deliver a programme of improvement initiatives to address the findings of the 'Review of State Highway Pavement Delivery' report. The Executive Summary of the Andy Wright Project Services Ltd report is provided here.

A full copy of the report is provided in Appendix 1.

In 2017 Waka Kotahi started to specify the pavement design on D&C Contracts & Alliances as it does on Construct only contracts. This was in response to significant early pavement failures across multiple projects. It was Waka Kotahi's experience that contractors generally did not offer innovative designs but rather low quality and high-risk designs to maximise commercial advantage.

In Jan 2020 an independent review of State Highway Pavement Delivery concluded (amongst other things) that client specified pavement design was not utilising full "industry expertise" that is available to influence and optimise pavement design.

A pavement Delivery System Review Steering Group was created to develop and deliver a programme of improvement initiatives to address the findings of the Jan 2020 report. One of the workstreams under this Steering Group is the Influence of Procurement & Delivery Models on Pavement Performance. This work stream is based on and extends the scoping document entitled "Workstream Procurement" that was subsequently prepared by Waka Kotahi.

The scope of this review will include an assessment of the procurement of both Capital and Network Outcomes contracts.

This review finds substantial agreement with the outcomes of both the Highway Pavement Delivery Review Paper as well as Waka Kotahi's Workstream procurement document in particular:

1. For price competitive procurement models, that the focus of tenderers is on the lowest cost pavement design that meets the requirements of the specifications, and not necessarily, or primarily, on delivering a robust design that achieves the 25-year design life objective.
2. That this aggressive commercial focus increases the risk of poor long term pavement performance.

Following the review of the reference papers referred to above, the author provides initial recommendations improvements of the current procurement models that may improve the performance outcomes of contractor-lead pavement designs.

These initial recommendations are subsequently tested against the opinions of Waka Kotahi, contractor and designer personnel. Interviews with these personnel concluded that the personnel interviewed largely supported the current approach of a Principal prescribed design, subject to key criteria. It is acknowledged that the sample interviewed from the supplier industry was small, and that a wider survey of the market may reveal differing opinions.

Modified recommendations emanating from these interviews, including the criteria on which these recommendations are based, are described in sections 10 and 11.5 **and summarised in Section 4.0 Required Responses, commencing overleaf.**

4.0 Required Responses

A total of six Required Responses have been determined by the PDSR Steering Group, following their review of the Andy Wright Project Services Ltd report, provided in Appendix 1.

Required Response WS3.1

That Waka Kotahi continues to consult collaboratively with the industry in the development of appropriate standards, specifications and guidelines, for the design, construction and maintenance of road pavements. All new specifications and guidance material should include online advice and / or training resources.

Required Response WS3.2

That Waka Kotahi provides Principal prescribed pavement designs for new and rehabilitation projects subject to the following criteria:

- a) That industry concerns in respect of the pavement design standards are discussed and considered through collaborative consultation with the industry, as per Required Response 3.1.
- b) That the pavement designs be carried out by independent Principal appointed pavement designers.
- c) That design responsibility be retained by the independent Principal appointed pavement designers.
- d) Provision of a separate construction prequalification category for pavement construction, potentially to be included within a surfacing category.

Required Response WS3.3

The Steering Group is reluctant to encourage tenderers to nominate alternative pavements during tendering. Instead, it has recommended that the Principal remains open to considering innovative pavement ideas, that should be raised at any time outside of the tender process.

Required Response WS3.4

That for contractor-led procurement models, excluding Principal prescribed design, pavement design and construction be:

- a) Scheduled as a Provisional Sum
- b) Designed and priced in conjunction with the Principal, Principal's Agent, and an Independent Estimator following contract award.

Continued: -

Required Response WS3.5

That, for contractor led pavement project designs, Non-Price Attributes place a higher threshold on pavement design and construction expertise through:

- a) Provision of a separate construction prequalification category for pavement construction, potentially to be included within a surfacing category.
- b) Consideration of a prequalification requirement for demonstrated consultant experience in the effective supervision of pavement construction.
- c) Greater weighting of NPA scoring of Relevant Skills required for pavement design and construction.
- d) Greater interrogation of the tenderers' proposed pavement design and construction personnel at the interactive meetings, and that these, and other aspects of the interactive meetings be included in the NPA scoring.
- e) Tender requirements that place a greater obligation on contractors and designers to resource their projects with personnel nominated in the tender proposals (refer to Required Response 3.6).

Required Response WS3.6

That the Principal recognises the challenges for contractors in employing and retaining suitably experienced personnel, and that procurement procedures require the following:

- a) That tender proposals outline the contractors' intended employee development programmes in the contract and how, when and by whom, the nominated personnel will be replaced through the development programme. This proposal will be scored as an integral part of Relevant Skills.
- b) That the accuracy with which the contractor adheres to the approved contractors' staff development programme, is scored in the PACE assessment of contracts for consideration in subsequent tenders.
- c) Retention of the current measures for financial penalties in the event of non-compliance with agreed resourcing commitments.

Appendices

Appendix Number	Content
App. 1	Andy Wright Project Services Ltd report 'Influence of Procurement and Delivery Models on Pavement Performance' dated 21 July 2022.