KPI 5.3.1 Pavement condition (joint measure)

This KPI is actively being developed with a cross industry group. Details drafted here are indicative only.

Intent

- Achieve planned pavement condition across the State Highway network

- Understand and optimise performance of underlying factors

- Recognise contributions from:

  - Client (Waka Kotahi): strategic investment decision making and supporting processes

  - Contractor: planning and delivery of maintenance and renewals

Definition

This KPI recognises that the outcomes are the joint accountability of both Client and Contractor, and measures the performance of the underlying contributions from both parties.

Pavement condition is the outcome measure and will be tracked using the annually collected High Speed data (75th percentile Rutting) to provide context for the following related measures:

- Achievement of local forecast pavement condition outcomes based on funded FWP
- Fault identification and management
- Ratio of pavement and surfacing maintenance and total Renewal investment
- Stability of pipeline quantities
- Timeliness of funding decisions

The goal of optimising outcomes will be shared by both parties, seeking to deliver to the collaborative intent of the NOC contract.

Development of the key underlying contributions will continue until baseline performance can be understood.

Business Rules

- Industry guidelines[1] around Fault identification are to be embedded by the Contractor
- While measures will be tracked at the highest frequency enabled by the underlying data source, they will be interpreted in the wider context of relevant cycles ie NLTP.
- The basis of any adjustments to agreed targets or measures must be agreed by both parties
- Juno is used for Pavement condition forecasting, using the centrally agreed FWP
- A full pavement and surfacing network inspection is completed annually, at approximately the same time each year (preferably after the season's repair programme has been completed and while the pavement surface is dry)

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[1] It is understood that implementation of updated industry guidelines will evolve over time, and the best available resources will be used at any given time.

Process

<u>Achievement of local forecast pavement condition outcomes based on funded FWP</u>

- As part of the Asset management process, Juno viewer is to be used to forecast 75th percentile rutting based on funded FWP
- Sub-networks can be identified as necessary (eg ONRC or other relevant local factors)
- The forecast(s) are compared to the HSD rutting measure to assess if the outcome has been achieved or not.
- Variance is analysed for continuous improvement and for development of the measurement system

<u>Fault identification and management</u>

- Full pavement and surfacing network inspection is completed each year[2], identifying all pavement and surfacing faults and assigning severity to them in accordance with established industry guidelines
- Faults are entered in RAMM
- High severity faults should be repaired, and preventative maintenance activities carried out to stop low severity issues becoming high severity
- Faults within Year 0 reseal sites are tracked to ensure treatment in advance of sealing
- Percentage of faults removed before the next annual network inspection is tracked, including fault severity
- An Annual Fault score is calculated:
    - based on area and severity of each fault (eg Severity 4 fault measured at 6 square meters, 6 m^2 x 60% = 3.6)
    - aggregated for the network (as well as any identified sub-networks such as ONRC or other local factors if this is seen as useful for the NOC)

	1	2	3	4	5
Weight	0%	10%	20%	60%	100%

- The Annual Fault score is recalculated each year (or more frequently if desired), and tracked over time, and in context of the related measures in this KPI

<u>Tracking of pavement and surfacing maintenance and total Renewal investment</u>

- RAMM will be used to report the value and quantity of Annual surface and pavement maintenance activities
- Renewal investment will be tracked using both spend (from SAP) and physical quantities (from RAMM)
- The measures will be tracked together to monitor the levels of maintenance and renewals and how they contribute to pavement condition

<u>Stability of pipeline quantities and Timeliness of funding decisions</u>

- Waka Kotahi will track pipeline quantities at regional and national level
- Waka Kotahi will track funding decision making, and communication of funding decisions, mapped against documented timelines
- Delays will be identified, and consideration given to the downstream impacts or disruption caused and how this effects pavement condition outcomes

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[2] Commitment to full network inspections can be identified in tender documentation and MMP.

Data Required

Data requirements will be refined as the KPI is developed. The list below is indicative only.

- HSD Pavement condition data: 75th percentile rutting
- Local forecast pavement condition outcome (75th percentile rutting) based on funded FWP (including any documented sub-networks)
- Variance analysis
- Pavement and surfacing fault data in RAMM including severity
- Fault tracking, including specific Year 0 reseal sites fault tracking
- Annual Fault identification measure calculation
- Pavement and surfacing maintenance spend and quantities (RAMM)
- Total Renewal investment and quantities (SAP and RAMM)
- Pipeline quantities at regional and national level
- Client adherence to funding decision and communication timeframes

Measure score table

Not scored in this model, however some indication of what good looks like has been articulated as a starting point for consideration.

While some measures describe a greater input from one party than another, all are interrelated. The level of overall success is a reflection of the contribution of all parties.

Measure	What good looks like
Achievement of local forecast pavement conditions based on funded FWP	75th percentile rutting measure forecast based on funded FWP - Annual HSD demonstrates that forecast 75th percentile rutting measure has been achieved - Variance is understood
Fault identification and management	- Full pavement and surfacing network inspection completed to the required accuracy by agreed date; - All faults identified in full network inspection on Y0 reseal sites treated in advance of sealing; - TBA% (Determine the right level) of faults identified in previous full network inspection removed by 30/6 the following year; and - Annual fault score is tracked year on year, with goal for overall reduction[3]
Tracking of pavement and surfacing maintenance and total Renewal investment	- The relationship between levels of maintenance and renewals is understood and reported. - Changes in balance of investment have been identified, and then investigated to increase understanding of Pavement condition, and any opportunities or issues.
Stability of pipeline quantities and Timeliness of funding decisions	- Funding decisions and supporting processes adhere to documented timelines - The impacts of any unavoidable disruption to timelines is understood and recognised - Pipeline quantities are steady and predictable
Outcome measure	**75th percentile rutting measure improving nationally**

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[3] Fault reduction may interrelate with other measures within this KPI, and appropriate caveats may be developed as baseline performance is understood.