

## Planned Data Quality Framework Enhancements for 2022-23

Since the first issue of the data quality reports in 2015/16 the framework and underlying metrics have gone through a number of changes. Over the years the original ONRC and subsequent Asset Management reports have been merged, metrics retired, additional metrics included, etc. These changes, as the framework has matured, have impacted on the overall balance by the quality dimensions and data categories.

In preparation for the **2022/23 Data Quality Reporting** the existing framework and metrics have been reviewed and potential enhancements identified. These are either the result of feedback from the sector against specific metrics, or Te Ringa Maimoa identified improvements.

The review has considered the existing framework used for the 2020/21 in the following two areas:

- At an **overall framework level** considering the balance of the framework across the data categories and quality dimensions tested.
- At a **metric level** considering the individual metrics based on feedback from the sector, bring in industry developments (eg ONF, AMDS, CCDC, etc.) and analysis to gain a deeper understanding of the metric results that have consistently been below the current expected standard and showing little improvement.



## Summary of the planned key changes for 2022/23

- Improve the balance of the framework across the quality dimensions and data categories
- Inclusion of ONF
- Consideration of AMDS and CCDC
- Adding, updating and retiring of specific metrics:
  - To support the above planned improvements
  - Based on sector feedback and analysis of previous year’s results
  - Where they are considered to not add value to the overall framework

Category	Ref	Metric Description	Element	Importance	ONRC Customer Outcome	ONRC Metric	Result	Trend	Comparison of all RCAs
Network Carriageway	CI00V1	Road network data complete	Accuracy	High	100.0	100.0	▲	100.0	
Network Carriageway	CI00V3	ONRC categories assigned to rural carriageways	Completeness	High	98.7	98.7	▲	98.7	
Network Carriageway	CI00V4	ONRC categories are assigned	Completeness	High	100.0	100.0	▲	100.0	
Network Carriageway	CI00V7	Scale/forecasted network correctly defined	Completeness	High	100.0	100.0	▲	100.0	
Network Carriageway	CI00V5	Assigned ONRC category aligns with traffic data	Accuracy	High	99.4	99.4	▲	99.4	
Network Carriageway	CI00V2a	Rural carriageways are generally not short	Accuracy	Moderate	83.2	83.2	▲	83.2	
Network Carriageway	CI00V6	Urban carriageways are generally not short	Accuracy	Moderate	95.2	95.2	▲	95.2	
Network Carriageway	CI00V2b	Rural number of lanes matches carriageway width	Accuracy	Low	98.8	98.8	▲	98.8	
Network Carriageway	CI00V2c	Urban number of lanes matches carriageway width	Accuracy	Low	99.1	99.1	▲	99.1	
Network Treatment Length	TREAT1	Treatment Length dimensions match sealed area	Accuracy	High	99.7	99.7	▲	99.7	
Network Treatment Length	TREAT2	Treatment Lengths are correctly not short	Accuracy	High	99.0	99.0	▲	99.0	

## Improving the balance of the framework

2021/22 distribution:

Quality Dimension	Data Category
Accuracy   19 metrics (36%)	Network   10 metrics (19%)
Completeness   18 metrics (34%)	Asset Inventory   25 metrics (47%)
Timeliness   16 metrics (30%)	Maint. Activity   5 metrics (9%)
-	Condition   4 metrics (8%)
-	Demand/Use   7 metrics (13%)
-	Crash   2 metrics (4%)

Planned 2022/23 distribution:

Quality Dimension	Data Category
Accuracy   18 metrics (37%)	Network   8 metrics (16%)
Completeness   14 metrics (29%)	Asset Inventory   19 metrics (39%)
Timeliness   17 metrics (35%)	Maint. Activity   5 metrics (10%)
-	Condition   8 metrics (16%)
-	Demand/Use   7 metrics (14%)
-	Crash   2 metrics (4%)

The improved distribution is achieved through:

- Broadening the Condition data category to include other asset types
- Splitting a number of Asset Inventory data category metrics to have at least 1 metric testing the Accuracy, Completeness and Timeliness quality dimensions
- ‘Combining’ metrics of a similar measure into a single indicator at a sub-category level, particularly in the Asset Inventory category
- Inclusion of an additional metric testing the Accuracy quality dimension in the Demand/Use category

## Summary of the metrics combined to form a single indicator

Metrics of the same data subcategory, importance level and quality dimension have been combined to form single indicators. These are still reported as individual metrics in the results and retain their existing metric reference but they aggregated in the dashboard results and calculation of the Score.

The details of which metrics are combined with which to create a single indicator are shown below. In all cases, all metrics relevant to an RCA carry an equal weighting within the combination.

Network	Asset Inventory	Condition	Demand/Use
CWAY1   CWAY7	SURF1a   SURF1b*	HSD1   HSD2   HSD3	ESTIM2a   ESTIM2b   ESTIM2c*
CWAY2a   CWAY2b*	SURF2   SURF3	DRAIN4   SWC4	
CWAY6a   CWAY6b*	SURF4   SURF5		
TREAT1   TREAT 3	DRAIN2   SWC2		
TREAT2a   TREAT2b*	DRAIN3   SWC3		
	DRAIN5   SWC5		
	SIGNS3   LIGHTS3   RAIL2		
	SIGNS4   LIGHTS5   RAIL5		
	SIGNS5   LIGHTS4   RAIL3		

\*metrics already combined to report as a single indicator

## Consideration of CCDC

Additional metrics in the Condition data category to cover the intended minimum requirements of CCDC plus expanding to include other asset types

2021/22 sub-categories:

Sub-category
Roughness
Rating



Planned 2022/23 sub-categories:

Sub-category
Pavement & Surfacing <ul style="list-style-type: none"><li>• Roughness</li><li>• Rating</li><li>• HSD (rutting, texture, geometry)</li></ul>
Pathways <ul style="list-style-type: none"><li>• Footpaths</li></ul>
Drainage System <ul style="list-style-type: none"><li>• Culverts</li><li>• Kerb and channel</li></ul>
Structures <ul style="list-style-type: none"><li>• Retaining walls</li></ul>

The HSD metric results are to be provided for information only initially. Their results are excluded from the aggregated dashboard results and the Score calculation.

Future proofing has been considered with the new sub-categories. Other asset types can be added to the framework when appropriate and the data allows (ie. Bridges added to the Structures sub-category for TLAs)

## Planned metric changes for 2022/23

### Network

Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Carriageway	CWAY1	Updated	Road network data complete	Accuracy	High	Metric to be paired with CWAY7 to report as a single indicator
Carriageway	CWAY7	Updated	Sealed/unsealed network correctly defined	Accuracy	High	Metric to be paired with CWAY1 to report as a single indicator
Treatment Length	TREAT1	Updated	Treatment Length dimensions match sealed area	Accuracy	High	Metric to be paired with TREAT3 to report as a single indicator
Treatment Length	TREAT3	Updated	Treatment Lengths match major surfaces	Accuracy	Moderate	Metric to be paired with TREAT1 to report as a single indicator

## Asset Inventory

Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Pavement & Surfacing	SURF2	Updated	Surface records have valid attribute data	Accuracy	High	Metric to be paired with SURF3 to report as a single indicator
Pavement & Surfacing	SURF3	Updated	Surface records correctly located	Accuracy	High	Metric to be paired with SURF2 to report as a single indicator
Pavement & Surfacing	SURF4	Updated	Surface records with original cost	Completeness	High	Metric to be paired with SURF5 to report as a single indicator
Pavement & Surfacing	SURF5	Updated	Surface records with work origin	Completeness	High	Metric to be paired with SURF4 to report as a single indicator
Pavement & Surfacing	SURF2	Updated	Surface records have valid attribute data	Accuracy	High	Metric to be paired with SURF3 to report as a single indicator
Pavement & Surfacing	SURF3	Updated	Surface records correctly located	Accuracy	High	Metric to be paired with SURF2 to report as a single indicator
Pavement & Surfacing	SURF4	Updated	Surface records with original cost	Completeness	High	Metric to be paired with SURF5 to report as a single indicator
Pavement & Surfacing	SURF5	Updated	Surface records with work origin	Completeness	High	Metric to be paired with SURF4 to report as a single indicator

### Asset Inventory (cont....)

Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Pathways	FOOT1	Retired	Footpath asset known	Completeness	Moderate	Metric to be retired and replaced with FOOT3 and FOOT5
Pathways	FOOT3	New	Footpath data valid	Accuracy	Moderate	Existing FOOT1 metric seperated into an Accuracy (FOOT3) and Completeness (FOOT5) metric with consideration of AMDS
Pathways	FOOT5	New	Footpath asset known	Completeness	Moderate	Existing FOOT1 metric seperated into a Completeness and Accuracy metric with consideration of AMDS
Drainage System	DRAIN1	Retired	Culvert assets known	Completeness	Moderate	Metric to be retired and replaced with DRAIN3 and DRAIN5
Drainage System	DRAIN2	Updated	Culvert asset records maintained	Timeliness	Low	Metric to be paired with SWC2 to report as a single indicator
Drainage System	DRAIN3	New	Culvert data valid	Accuracy	Moderate	Existing DRAIN1 metric seperated into an Accuracy (DRAIN3) and Completeness (DRAIN5) metric with consideration of AMDS Metric to be paired with SWC3 to report as a single indicator
Drainage System	DRAIN5	New	Culvert assets known	Completeness	Moderate	Existing DRAIN1 metric seperated into an Accuracy (DRAIN3) and Completeness (DRAIN5) metric with consideration of AMDS Metric to be paired with SWC5 to report as a single indicator



### Asset Inventory (cont....)

Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Drainage System	SWC1	Retired	SWC asset known	Completeness	Moderate	Metric to be retired and replaced with SWC3 and SWC5
Drainage System	SWC2	Updated	SWC asset records maintained	Timeliness	Low	Metric to be paired with DRAIN2 to report as a single indicator
Drainage System	SWC3	New	SWC data valid	Accuracy	Moderate	Existing SWC1 metric seperated into an Accuracy (SWC3) and Completeness (SWC5) metric with consideration of AMDS Metric to be paired with DRAIN3 to report as a single indicator
Traffic Facilities & Streetlights	SIGNS1	Retired	Sign assets known	Completeness	Low	Metric to be retired and replaced with SIGNS4
Traffic Facilities & Streetlights	SIGNS2	Retired	Sign data valid	Accuracy	Low	Metric to be retired and replaced with SIGNS5
Traffic Facilities & Streetlights	SIGNS3	Active	Sign replacement activity	Timeliness	Low	Metric to be paired with RAIL2 and LIGHTS3 to report as a single indicator
Traffic Facilities & Streetlights	SIGNS4	New	Sign assets known	Completeness	Low	New metric to replace SIGNS1 following consideration of AMDS and consistency with other similar metrics in the Asset Inventory category Metric to be paired with RAIL5 and LIGHTS5 to report as a single indicator

### Asset Inventory (cont....)

Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Traffic Facilities & Streetlights	SIGNS5	New	Sign data valid	Accuracy	Low	New metric to replace SIGNS2 following consideration of consistency with other similar metrics in the Asset Inventory category Metric to be paired with RAIL3 and LIGHTS4 to report as a single indicator
Traffic Facilities & Streetlights	RAIL1	Retired	Railing assets known	Completeness	Low	Metric to be retired and replaced with RAIL3 and RAIL5
Traffic Facilities & Streetlights	RAIL2	Active	Railing asset records maintained	Timeliness	Low	Metric to be paired with SIGNS3 and LIGHTS3 to report as a single indicator
Traffic Facilities & Streetlights	RAIL3	New	Railing data valid	Accuracy	Low	Existing RAIL1 metric seperated into an Accuracy (RAIL3) and Completeness (RAIL5) metric with consideration of AMDS Metric to be paired with SIGNS5 and LIGHTS4 to report as a single indicator
Traffic Facilities & Streetlights	RAIL5	New	Railing assets known	Completeness	Low	Existing RAIL1 metric seperated into an Accuracy (RAIL3) and Completeness (RAIL5) metric with consideration of AMDS Metric to be paired with SIGNS4 and LIGHTS5 to report as a single indicator

### Asset Inventory (cont....)

Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Traffic Facilities & Streetlights	LIGHTS1	Retired	Streetlights data valid	Accuracy	Low	Metric to be retired and replaced with LIGHTS4
Traffic Facilities & Streetlights	LIGHTS2	Retired	Streetlights assets known	Completeness	Low	Metric to be retired and replaced with LIGHTS5
Traffic Facilities & Streetlights	LIGHTS3	Updated	Streetlight replacement activity	Timeliness	Low	Metric to be paired with SIGNS3 and RAIL2 to report as a single indicator
Traffic Facilities & Streetlights	LIGHTS4	New	Streetlights data valid	Accuracy	Low	New metric to replace LIGHTS1 following consideration of AMDS and consistency with other similar metrics in the Asset Inventory category Metric to be paired with SIGNS5 and RAIL3 to report as a single indicator
Traffic Facilities & Streetlights	LIGHTS5	New	Streetlights assets known	Completeness	Low	New metric to replace LIGHTS2 following consideration of consistency with other similar metrics in the Asset Inventory category Metric to be paired with SIGNS4 and RAIL5 to report as a single indicator

## Asset Inventory (cont....)

Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Structures	RETAIN1	Retired	Retaining Wall assets known	Completeness	Moderate	Metric to be retired and replaced with RETAIN3 and RETAIN5
Structures	RETAIN3	New	Retaining wall data valid	Accuracy	Moderate	Existing RETAIN1 metric seperated into an Accuracy (RETAIN3) and Completeness (RETAIN5) metric with consideration of AMDS
Structures	RETAIN5	New	Retaining Wall assets known	Completeness	Moderate	Existing RETAIN1 metric seperated into an Accuracy (RETAIN3) and Completeness (RETAIN5) metric with consideration of AMDS

## Condition

Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Pavement & Surfacing	HSD1	New	HSD rutting survey within 3 years	Timeliness	Low	New metrics added in consideration of CCDC. Currently with a low importance level and combined to report as a single indicator
Pavement & Surfacing	HSD2	New	HSD texture survey within 3 years	Timeliness	Low	
Pavement & Surfacing	HSD3	New	HSD geometry survey within 5 years	Timeliness	Low	
Pathways	FOOT4	New	Footpath condition within 3 years	Timeliness	High	Recorded asset condition for other asset types separated out. Focus on the 'higher value' assets
Drainage System	DRAIN4	New	Culvert condition within 3 years	Timeliness	Moderate	
Drainage System	SWC4	New	Kerb and channel condition within 3 years	Timeliness	Moderate	
Structures	RETAIN4	New	Retaining wall condition within 3 years	Timeliness	Moderate	