

Planned Data Quality Framework Enhancements for 2021-22

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 **2021/22 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 REG 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, 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 key changes for 2020/21

- 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	Suf	Metric Description	Dimension	Importance	ONRC Customer Outcome	ONRC Metric	Result	Trend	Comparison of all SCAs
Network Cartageway	CIW01	Road network data complete	Accuracy	High	ONRC	ONRC	98.7	▲	98.7
Network Cartageway	CIW03	ONRC categories assigned to new cartageways	Completeness	High	ONRC	ONRC	100.0	▲	100.0
Network Cartageway	CIW04	ONRC categories are assigned	Completeness	High	ONRC	ONRC	100.0	▲	100.0
Network Cartageway	CIW07	Deactivated network correctly defined	Completeness	High	ONRC	ONRC	100.0	▲	100.0
Network Cartageway	CIW08	Assigned ONRC category aligns with traffic data	Accuracy	High	ONRC	ONRC	100.0	▲	100.0
Network Cartageway	CIW09a	Rural cartageways are generally not short	Accuracy	Moderate	ONRC	ONRC	99.4	▲	99.4
Network Cartageway	CIW09b	Urban cartageways are generally not short	Accuracy	Moderate	ONRC	ONRC	83.2	▲	83.2
Network Cartageway	CIW09c	Rural number of lanes matches cartageway width	Accuracy	Moderate	ONRC	ONRC	95.2	▲	95.2
Network Cartageway	CIW09d	Urban number of lanes matches cartageway width	Accuracy	Low	ONRC	ONRC	98.8	▲	98.8
Network Treatment Length	TREA1	Treatment Length dimensions match cartageway width	Accuracy	High	ONRC	ONRC	99.1	▲	99.1
Network	TREA2a	Treatment Length dimensions match sealed area	Accuracy	High	ONRC	ONRC	95.5	▲	95.5
Network	TREA2b	Treatment Length dimensions match sealed area	Accuracy	High	ONRC	ONRC	98.7	▲	98.7
Network	TREA2c	Treatment Length dimensions match sealed area	Accuracy	High	ONRC	ONRC	99.0	▲	99.0

Improving the balance of the framework

2020/21 distribution:

Quality Dimension	Data Category
Accuracy 20 metrics (37%)	Network 11 metrics (20%)
Completeness 21 metrics (39%)	Asset Inventory 25 metrics (46%)
Timeliness 13 metrics (24%)	Maint. Activity 5 metrics (9%)
-	Condition 4 metrics (7%)
-	Demand/Use 7 metrics (13%)
-	Crash 2 metrics (4%)

Planned 2021/22 distribution:

Quality Dimension	Data Category
Accuracy 19 metrics (39%)	Network 9 metrics (18%)
Completeness 14 metrics (29%)	Asset Inventory 19 metrics (39%)
Timeliness 17 metrics (33%)	Maint. Activity 5 metrics (10%)
-	Condition 7 metrics (14%)
-	Demand/Use 7 metrics (14%)
-	Crash 2 metrics (4%)

The improved distribution is achieved through:

- Broadening the Condition category to include other asset types
- Splitting a number of Asset Information 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

Inclusion of ONF

Additional metric included looking at the quality of this categorisation and run in parallel with ONRC initially.

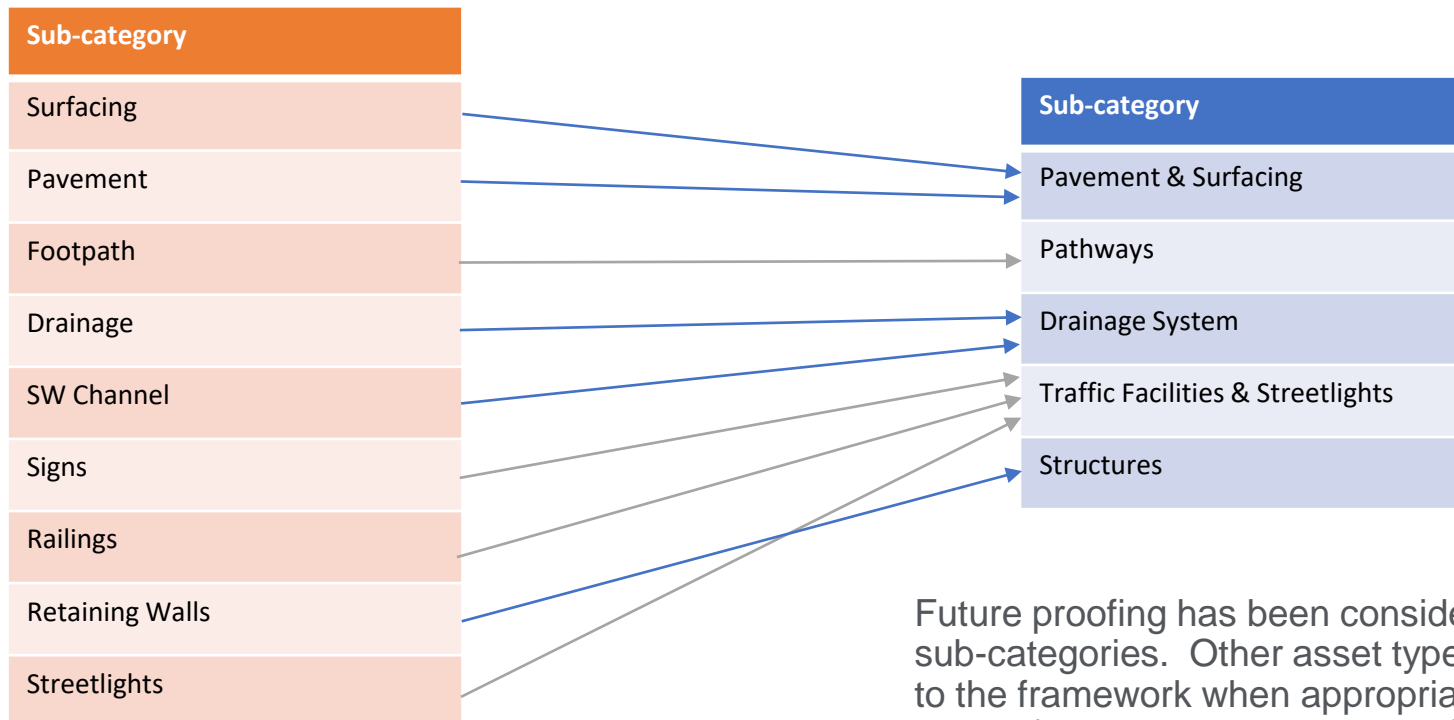
Category	Sub-Category	Metric Reference	Metric Description	Primary Dimension	Asset Management Importance
Network	Carriageway	CWAY4	ONRC categories are assigned The proportion of the number of carriageway section records in the carriageway table with an assigned ONRC category	Completeness	High
Network	Carriageway	CWAY8	ONF categories are assigned The proportion of the number of carriageway section records in the carriageway table with an assigned ONF category	Completeness	High

Consideration of AMDS

Rationalisation of the Asset Inventory sub-categories to align with AMDS terminology

2020/21 sub-categories:

Planned 2021/22 sub-categories:



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)

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

2020/21 sub-categories:

Sub-category
Roughness
Rating



Planned 2021/22 sub-categories:

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

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 2021/22

Network

2020/21 Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Carriageway	CWAY3	Retired	ONRC categories assigned to new carriageways	Timeliness	High	Metric to be retired in 2021/22
Carriageway	CWAY6a	Updated	Rural carriageways are generally not short	Accuracy	Low	Importance level changed to Low
Carriageway	CWAY6b	Updated	Urban carriageways are generally not short	Accuracy	Low	Importance level changed to Low
Carriageway	CWAY8	New	ONF categories are assigned	Completeness	High	New metric added in 2021/22 reporting the completeness of this categorisation.
Treatment Length	TREAT1	Updated	Treatment Length dimensions match sealed area	Accuracy	High	Short treatment lengths with a length <50m excluded from the results.
Treatment Length	TREAT2a	Updated	Treatment Lengths are generally not short	Accuracy	High	Updated to exclude scenario like short sealed back sections on unsealed roads
Treatment Length	TREAT2b*	Updated	Treatment Lengths are not too long	Accuracy	High	What is considered long being reviewed to challenge the limit is 'right'.

* Item not closed out at the time of preparing this communication.

Asset Inventory

2020/21 Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Surfacing	SURF6	Update	Surface records newer than pavement	Accuracy	Moderate	Updated to only include where the major pavement layer coverage is >=50% of the treatment length.
Footpath	FOOT1	Update	Footpath assets known	Completeness	Moderate	Existing FOOT1 metric separated into a Completeness and Accuracy metric plus consideration of AMDS
Footpath	FOOT3	New	Footpath data valid	Accuracy	Moderate	
Drainage	DRAIN1	Update	Culvert assets known	Completeness	Moderate	Existing DRAIN1 metric separated into a Completeness and Accuracy metric plus consideration of AMDS
Drainage	DRAIN3	New	Culvert data valid	Accuracy	Moderate	
SW Channel	SWC1	Update	SWC assets known	Completeness	Moderate	Existing SWC1 metric separated into a Completeness and Accuracy metric plus consideration of AMDS
SW Channel	SWC3	New	SWC data valid	Accuracy	Moderate	
Railings	RAIL1	Update	Railing assets known	Completeness	Low	Existing RAIL1 metric separated into a Completeness and Accuracy metric plus consideration of AMDS. RAIL1 importance level reduced to Low and grade ranges updated
Railings	RAIL3	New	Railing data valid	Accuracy	Low	

Asset Inventory (cont....)

2020/21 Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Retaining Walls	RETAIN1	Update	Retaining wall assets known	Completeness	Moderate	Existing RETAIN1 metric separated into a Completeness and Accuracy metric plus consideration of AMDS
Retaining Walls	RETAIN3	New	Retaining wall data valid	Accuracy	Moderate	
Signs	SIGNS1	Update	Sign assets known	Completeness	Low	Updated following consideration of AMDS, importance level reduced to Low and grade ranges updated
Signs	SIGNS2	Update	Sign data valid	Accuracy	Low	Updated to be consistent with the similar metrics for other asset types.
Streetlights	LIGHTS1	Update	Streetlights data valid	Accuracy	Low	Updated to be consistent with the similar metrics for other asset types.
Streetlights	LIGHTS2	Update	Streetlights assets known	Completeness	Low	Updated following consideration of AMDS, importance level reduced to Low and grade ranges updated

Maintenance Activity

2020/21 Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Maintenance Activity	MAINT	Update	Complete pavement and surface maintenance activity	Timeliness	High	Quality dimension changed to Timeliness

Condition

2020/21 Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Rating	RATING1	Update	Road rating data current	Timeliness	High	Quality dimension changed to Timeliness
Roughness	ROUGH1	Update	Roughness survey within 2.5 years	Timeliness	High	
NA	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
NA	HSD2	New	HSD texture survey within 3 years	Timeliness	Low	
NA	HSD3	New	HSD geometry survey within 5 years	Timeliness	Low	
NA	FOOT4	New	Footpath condition within 3 years	Timeliness	High	
NA	DRAIN4	New	Culvert condition within 3 years	Timeliness	Moderate	Recorded asset condition for other asset types separated out. Focus on the 'higher value' assets
NA	SWC4	New	Kerb and channel condition within 3 years	Timeliness	Moderate	
NA	RETAIN4	New	Retaining wall condition within 3 years	Timeliness	Moderate	

Demand/Use

2020/21 Sub-Category	Metric Reference	Change Type	Metric Description	Primary Dimension	Asset Management Importance	Description of change
Traffic Count	COUNT1	Update	Road rating data current	Timeliness	High	Expected standard range reduced to >=40%
Traffic Estimates	ESTIM3	Retired	Traffic estimates updated following counts	Timeliness	High	Metric to be retired in 2021/22
Traffic Estimates	ESTIM5	New	Latest estimates align with counts	Accuracy	High	New metric added in 2021/22

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	DRAIN1 SWC1		
TREAT2a TREAT2b*	DRAIN2 SWC2		
	DRAIN3 SWC3		
	SIGNS1 LIGHTS2 RAIL1		
	SIGNS2 LIGHTS1 RAIL3		
	SIGNS3 LIGHTS3 RAIL2		

*metrics already combined to report as a single indicator