



Road & Footway Condition Measurement

1

Network Condition Measurement



The measurements

- The condition of **Roads** and **Footways** are measured regularly on the Isle of Wight
- These are measured annually for Roads and every 2 years for Footways
- These measurements come together to produce the contract requirements:
 - WCCI – *Wight Carriageway Condition Index*
 - WFCI – *Wight Footway Condition Index*
- Measurement and reporting is also carried out for **Car Parks** – the *Wight Car Park Condition Index or WCPCI*.

2

Network Condition Measurement



The roads and footways

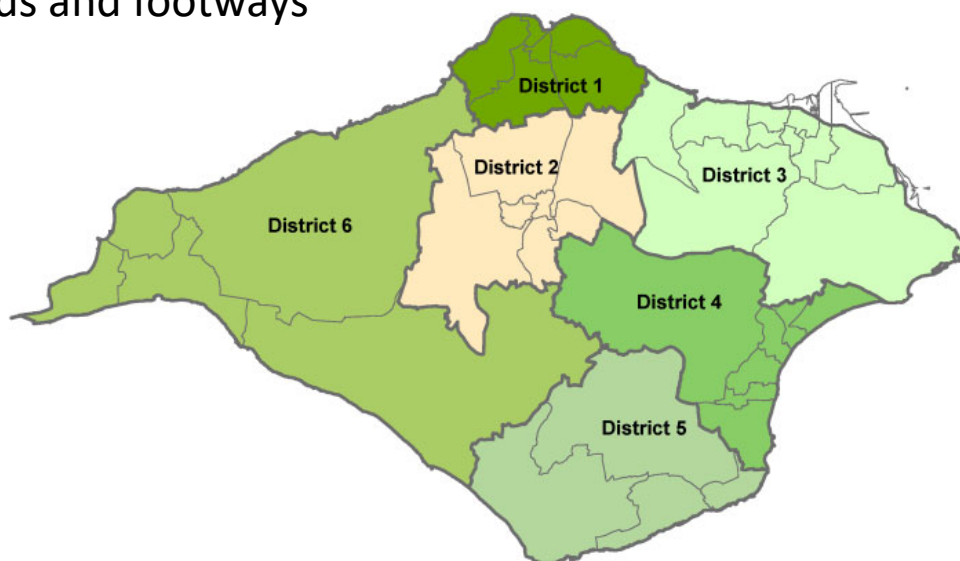
- All of our streets and roads are assessed on **Monitoring Lengths** (ML's), some streets may only be 1 ML, others may have more than 1 ML, depending on their length. Generally 250m in urban areas and 500m in rural areas
- The types of roads are split in to **Hierarchies** which generally reflect national road classifications:
 - H1 – A-Roads
 - H2 – Classified Roads
 - H3 – Other classified Roads
 - H4 – Lower use or Residential roads in general
- The Island is split into **6 Districts** for the highway services.

3

Network Condition Measurement



The roads and footways



4

Network Condition Measurement



Monitoring Lengths (ML)

- Monitoring Lengths are measured for their condition at set intervals:
 - 10 m intervals on roads
 - 20 m intervals on footways
- Millions of pieces of data are recorded
- The scores at each of these intervals are recorded and calculated and then each ML is assigned its average score
- There are over 3,000 ML's on the Island's network across the 6 Districts
- All of the scores are averaged for each of the **Hierarchies** within each of the **Districts**.

5

Network Condition Measurement



What makes up a score?

- The scores for each road and footway are recorded either by machine surveys, or visually by an inspector. These are carried out by independent and nationally accredited surveyors and companies.



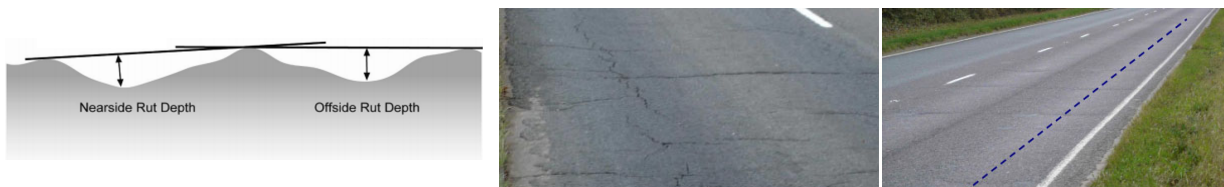
6

Network Condition Measurement



What makes up a score?

- The scores that are collected are designed to record the overall **structural** condition of a road or footway, based on visual aspects that can be measured:
 - Rutting of the road - *indicates strength where the traffic goes*
 - Cracking – *through pattern and severity, indicates structure*
 - Undulations – *indicate the underlying structure*



7

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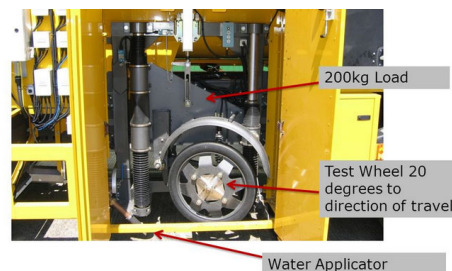


What makes up a score?

- The **safety** of the surface is also measured by its resistance to skidding, this is by a special machine that simulates **friction resistance**. It is also indicated by **surface texture** – *NB, a smooth road is not necessarily a good road for spray etc.*



Sideway-force Coefficient Routine Investigation Machine



8

Network Condition Measurement



What is the standard required?

- The overall score for a ML is calculated from:
 - **80% Structural Indicators**
 - **20% Safety Indicators**
- The score is out of 20, with 20 being a perfect road or footway, based on the measured features
- The contract specification is **not** for perfect roads or footways:
 - Roads (H1) – requirement is average 15.5 out of 20
 - Roads (H2-4) – requirement is average 15.0 out of 20
 - Footways – requirement is average 12.5 out of 20
- The **average** is for all the ML's scores across each **Hierarchy** in each **District**.

9

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What is the standard required?

| WCCI | DISTRICTS | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------|-----------|-------|-------|-------|-------|-------|-------|
| HIERARCHIES | 1 | 17.30 | 16.96 | 17.42 | 18.04 | 17.99 | 18.74 |
| | 2 | | 16.61 | 16.94 | 17.25 | 17.63 | 18.23 |
| | 3 | 16.97 | 15.69 | 16.30 | 16.74 | 16.18 | 17.21 |
| | 4 | 16.41 | 15.98 | 16.27 | 15.95 | 16.14 | 17.59 |
| | 4a | 16.25 | 16.64 | 16.67 | 17.09 | 16.73 | 17.06 |

| WFCI | DISTRICTS | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------|--------------|-------|-------|-------|-------|-------|-------|
| HIERARCHIES | 1b | 13.56 | 13.83 | 12.61 | 12.89 | 13.40 | 16.07 |
| | 4 & FW Links | 15.78 | 13.62 | 13.04 | 12.95 | 13.51 | 14.41 |

10

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What is the standard required?

- In addition to the **averages** there are **minimum** scores
 - For roads, no full ML can fall below a score of 6 out of 20
 - For footways, no full ML can fall below a score of 5 out of 20
- There are also measurements for “**Spot Defects**” with thresholds for the %’age of small areas of defects appearing in a ML, for instance broken edges to the road or depressions in roads
 - A certain %’age is allowed but if too high then they need to be rectified.
- Scores in a ML will be improved every time a spot defect is repaired, or if a pothole is filled.

11

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In summary

- The contract specification asks for average scores across all the ML’s in a hierarchy within a District
- The required scores are classified as Good rather than Excellent
- Averages mean that some can be lower and some higher than the requirements of $15.5/20$, $15.0/20$ and $12.5/20$
- The contract requirements also required that each District reached targets each half-year through the first 7 years, so the Districts saw even improvement in their roads and footways
- The contract for the remaining 18 years is then to maintain the scores above the averages, above the minimums and below the spot defect %’ages across all Districts.

12