

Highways Agency Performance Specification 2013-15 – Technical Note

Field	Notes
Short Title	The Proportion of the Network that is in a Condition that does not Require Further Investigation for Possible Maintenance.
Performance Specification Reference	Output 3 - PS 3.4a
Requirement / Output Details	Whilst this development work is taking place, the network operator should <i>continue to monitor and report on the current pavement condition indicator</i> , and the cost of maintaining the SRN per lane mile measure.
Technical Definition	<p>The UK Design Manual for Roads and Bridges (DMRB) standard HD29 defines road conditions measured by the TRAffic-speed Condition Surveys (TRACS) where deterioration is deemed to be:</p> <ul style="list-style-type: none"> • Category 1 – No visible deterioration • Category 2 – Low level deterioration & no action required • Category 3 - Moderate level of deterioration and investigation is required • Category 4 - Severe level of deterioration and intervention is required. <p>DMRB standard HD28 defines Investigatory Levels for pavement skid resistance which can be considered equivalent to Category 3 levels of surface condition.</p> <p>For the assessment of maintenance options, the condition associated with the preferred 'Do Something' option that is based on engineering standards, is likely to be between Categories 3 and 4.</p> <p>To represent the levels which define the conditions that have been investigated but do not need maintenance, intermediate thresholds, between the DMRB investigatory level (Category 3) and urgent need (Category 4) conditions, have been identified and are referred to as Category 3a. It is the percentage of the network assessed to have condition as good as or better than Category 3a which is reported as the condition performance measure.</p> <p>Note: The measures in HD28 and HD29 are indicative of defects corrected via renewal schemes (and not routine maintenance) and only pertain to pavement defects.</p>

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Rationale	<p>This measure reports on the overall road network condition as a result of deterioration of the pavement network due to time and traffic and restoration of condition from the annual investment in maintenance.</p> <p>The measure provides the Highways Agency (HA) with the confidence that renewals maintenance is undertaken at the right time and in the right place, making best use of the available funds.</p> <p>This is an established measure that has been used since 2004-05.</p>
Formula	<p>The method used to assess road network condition is:</p> <ul style="list-style-type: none"> • Undertake annual road condition surveys (lane 1) • Interpret the records of works undertaken on the network • Assess the condition of the network based on thresholds for condition (these are not the thresholds for renewals and have been agreed for a number of years and not set each year) <p><u>Undertake Road Condition Surveys</u></p> <p>Road surface condition information is obtained through annual road surveys;</p> <p>TRACS (TRAffic Speed Condition Surveys), where a vehicle travelling with the traffic flow gathers data on surface condition and SCRIM (Sideway force Coefficient Routine Investigation Machine) surveys of skidding resistance. The condition measurements are held for each 10m length of the network in the Highways Agency's Pavement Management System (HAPMS).</p> <p><u>Interpret the Records of Works Undertaken on the Network</u></p> <p>Records of renewals maintenance are stored in HAPMS.</p> <p><u>Assess the Condition of the Network Based on Thresholds for Condition</u></p> <p>The levels of condition that are used to indicate when investigation is required and when there is an urgent potential need for maintenance are given in Design Standards in Volume 7 of the DMRB.</p> <p>To report network condition, the most recent condition measurements (up to 2 years old) are combined with the definition of the network and records of pavement maintenance stored in HAPMS.</p> <p><u>Example (Illustrative)</u></p> <p>Note: The network condition is based on survey information based on Lane 1.</p> <p>The example shows the length in good condition scaled up for the</p>

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	<p>proportion of the network with data (condition and maintenance records).</p> <p>Total lane 1 length of the network = 7,500 miles</p> <p>Total lane 1 length of the network with condition data = 7,350 miles</p> <p>Total lane 1 length of network data not requiring further investigation (better than Category 3a condition) = 7,050 miles</p> <p>Total lane 1 length of the network not requiring further investigation (better than Category 3a condition) =</p> $= (7,050)/(7,350) \times 7,500 = 7,194 \text{ miles}$ <p>% of the network not requiring further investigation =</p> $= (7,194)/(7,500) \times 100 = 95.9\%$ <p>The annual report of network condition provided by the HA to the Department for Transport (DfT) and the National Audit Office (NAO) shows the condition of Lane 1, excluding the DBFO lengths in the network and includes a simplified assessment of the change in network condition from the previous year for all the network (including and excluding the DBFO lengths).</p>
Start Date	This measure has been reported against since April 2004.
Performance	The indicator will reflect the effectiveness of the expenditure on the renewal of pavement assets. Small changes (<1%) in the measure will indicate a substantive cost to rectify, owing to the nature of works necessary to correct the defects. It will not indicate the overall state of the Agency's assets (non-pavement) or the level of routine maintenance (potholes etc) that are also needed to keep the network safe and serviceable.
Behavioural Impact	<p>The indicator will show the effectiveness of pavement renewal schemes and use of associated funding.</p> <p>This would be supported by:</p> <ul style="list-style-type: none"> • Asset management plans • Value Management (VM) and Programme Development & Management Manual (PDMM) • Maintenance strategies/plans • In-year monitoring of condition to show the change in overall condition of the network

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Comparability	<p>The road condition is assessed in accordance with HA design standards [DMRB (Volume 7, Section 3. Part 2: HD28 and HD 29)].</p> <p>Measurements of pavement surface condition are made as part of the HA TRACS and SCRIM surveys of skidding resistance.</p> <p>The methodology for each type of survey is described in HA standards and uses survey equipment that has passed regular quality assessment trials. Similar surveys of pavement surface condition are undertaken by Local Authorities using SCANNER (Surface Condition Assessment for the National Network of Roads) vehicles and SCRIM. The DfT publishes road surface condition (ride quality and skidding resistance are reported separately) of the HA network at:</p> <p>http://www.dft.gov.uk/statistics?tag=road-conditions</p>
Collection Frequency	<p>Measurements used to report the pavement condition of the trunk road network are made, where possible, using annual surveys of lane 1 of the main carriageway of the entire network.</p>
Clearance Process	<p>Monthly performance reports are provided to Network Development and Delivery Directorate which are incorporated into the Corporate Performance Report. These are prepared by Network Services and reviewed by the Operational and Technical Solutions Divisional Director prior to submission to Network Development and Delivery Directorate.</p> <p>An annual end of year report is provided to the Highways Agency, DfT and NAO. This is prepared by Network Services and approved by the Network Services Director and shows:</p> <ul style="list-style-type: none"> • Condition of national, regional and Government Office networks • Changes in condition since the start of the year (1st April) • Expected change in network condition to the end (31st March) of the year (i.e. at the start of the year, what was the expected condition at the end of the year?) • Detailed reports on data used for the analysis (network length and data coverage) • Detailed reports on network condition parameters since the start (1st April) of the year • Details of other network condition parameters not presently used in the condition assessment target (e.g. fretting, cracking) • Age of condition data used in the analysis

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Time Lag	3 months.
Data Source	Highways Agency Pavement Management System (HAPMS).
Type of Data	Management Information.
Robustness and Data Limitations	<p>Information is loaded into HAPMS using approved quality assured procedures and the condition measurements are independently validated as part of the loading process.</p> <p>The reported condition takes into account the maintenance undertaken on the network (i.e. maintenance after a condition survey removes the condition survey data from the analysis).</p> <p>The annual report on network condition summarises the condition at the end of March (for the Business Plan year) and the condition during the year. This report is sent by the HA to the DfT and the National Audit Office (NAO) to show the condition of the network.</p>
Collecting Organisation	<p>Condition measurements are made and loaded into HAPMS by the contractors as part of central contracts for surface condition (TRACS contract) and 2 contracts (the network is split into the north and south) for skid resistance.</p> <p>Providers (MAC and Asset Support Contractors) supply up to date information for the definition of the network, the required levels of condition for skid resistance (Investigatory Levels are set for each length of the network and are stored in HAPMS) and records of maintenance undertaken on the network.</p>
Return Format	The pavement condition indicator is the percentage of the network in good condition at the end of the year together with a report describing the types of data used in the analysis, the data available for analysis and the change in condition through the year.
Geographical Coverage	England.
How Indicator Can be Broken Down	<p>For the HA, the national network condition reported is broken down into motorways, dual carriageway All Purpose Trunk Roads (APTRs) and single carriageway APTRs.</p> <p>In the HA end of year report, the condition is broken down by HA Region.</p>