

## Measurement template

Field	Notes
<b>Short title</b>	Reliability of journeys on Highways Agency's motorway and A road network
<b>Technical definition</b>	The reliability of journeys on Highways Agency's motorway and A road network is measured by the percentage of 'journeys' that are 'on time'. For this measure, a 'journey' represents travel between adjacent junctions on the network. An 'on time journey' is defined as one which is completed within a set reference time, drawn from historic data on that particular section of road.
<b>Rationale</b>	One of the Department's five structural reform priorities is to 'tackle carbon and congestion on our roads'. This indicator measures the extent to which this has been achieved, monitoring what studies have repeatedly shown to be the biggest problem caused by congestion – unreliable journey times.
<b>Formula</b>	<p>The measure is calculated as follows:</p> <ol style="list-style-type: none"> <li>1. Observed 'journey' times are calculated for each junction to junction road link in both carriageway directions for each 15 minute period.</li> <li>2. Pre-determined reference times are set for each of approximately 2,500 links, each 15 minute period of the day and for each of 13 day types (e.g. first working day of week). Reference times are based on historical averages specific to the link, time period and day type.</li> <li>3. The observed 'journey' times are compared to the pre-determined references. Where observed times are equal to or less than the reference times, these 'journeys' are deemed to be 'on time'.</li> <li>4. Where links are affected by roadworks, the observed 'journey' times are compared to alternative reference values, based on the temporary speed limit in place on that link.</li> <li>5. Performance for individual links and 15 minute time periods is aggregated based on respective traffic levels (flow * link length). This ensures those with higher numbers of vehicles travelling on them and/ or longer links have a larger contribution to the overall statistics.</li> </ol>

The following worked example shows how 'on time' performance is calculated for specific links/time periods and how link level performance is aggregated.

Calculation of performance for M25 Junction 15 to 16 (clockwise) on Wednesday 15<sup>th</sup> September 2010, 08:45 to 09:00

Reference time <i>(based on historical average for the link on normal working Wednesdays between 08:45 and 09:00)</i>	333 seconds
Observed time <i>(for the link on 15/9/2010 between 08:45 and 09:00)</i>	300 seconds
'Journey' time status	'On time'

Calculation of performance for M40 Junction 1a to 2 (westbound) on Wednesday 15<sup>th</sup> September 2010, 08:45 to 09:00

Reference time <i>(based on historical average for the link on normal working Wednesdays between 08:45 and 09:00)</i>	267 seconds
Observed time <i>(for the link on 15/9/2010 between 08:45 and 09:00)</i>	270 seconds
'Journey' time status	Not 'on time'

	<u>Calculation of <b>combined</b> performance for M25 Junction 15 to 16 and M40 Junction 1a to 2 on Wednesday 15<sup>th</sup> September 2010, 08:45 to 09:00</u>		
		M25 J15-16	M40 J1a-2
	Link length	5 miles	5 miles
	Flow along link <i>(for date/time period)</i>	1,500 vehicles	1,000 vehicles
	Vehicle miles travelled on link <i>(flow * link length)</i>	7,500 vehicle miles	5,000 vehicle miles
	'On time' performance for link	100%	0%
	Total vehicle miles 'on time' for links	7,500 vehicle miles	
	Total vehicle miles for links	12,500 vehicle miles	
	Combined 'on time' performance for links <i>(total vehicle miles 'on time' / total vehicle miles)</i>	60%	
	Multiple links and time periods are aggregated in a similar way to calculate overall performance across the network in any given period.		
Start date	May 2011 <u>Note</u> The publication of data for this impact indicator was delayed while further quality checks were carried out on the raw datasets underpinning the measure. Publication will commence in November 2011, showing monthly performance from April 2010 to September 2011 and rolling-year performance for the years ending March 2011 to September 2011.		
Latest data	This is a new measure so none currently available		
Performance	Changes in performance will be reflected through changes in 'on time' levels.		

<b>Behavioural impact</b>	No perverse incentives are anticipated
<b>Comparability</b>	Reliability is highly complex to measure. As such, there are currently no internationally recognised standards to enable comparison between countries.
<b>Collection frequency</b>	Data are collected continuously via monitoring equipment, but collated and processed to produce 'on time' performance on a monthly basis. Data will also be published on a monthly basis.
<b>Time lag</b>	Publication of performance will take place around 5-6 weeks after the end of each month. This period allows for the collation, processing and validation of the statistics to take place. Publications will be pre-announced in line with National Statistics requirements.
<b>Data source</b>	Data is sourced from the Highways Agency's Highways Agency Traffic Information System (HATRIS) database. This contains journey time data from Automatic Number Plate Recognition (ANPR) cameras, Motorway Incident Detection Automatic Signalling (MIDAS) inductive loops and in-vehicle Global Positioning System (GPS). HATRIS also contains traffic flow data from automatic count points.
<b>Type of data</b>	Aggregated data for complete network – National Statistic Disaggregated data for individual sections of the network – Management Information
<b>Robustness and data limitations</b>	<p>As a National Statistic, the measure will be produced and validated by Government statisticians.</p> <p>The data for individual sections of the network are not sufficiently robust to be presented as official statistics so are currently released instead as 'Management Information'. This is due to the data being drawn from a number of different sources, making comparisons between different sections of the network difficult. These disaggregated data should therefore be treated with caution.</p> <p>The Department is working with the Highways Agency to address the issues around comparing reliability for different sections of the network. It is likely that any actions to address these issues will also require some historic adjustment to the national series although the trends reported in national reliability to date are unlikely to change.</p>
<b>Collecting</b>	Highways Agency/Department for Transport

<b>organisation</b>	
<b>Return format</b>	Percentage of 'journeys' that are 'on time'
<b>Geographical coverage</b>	England
<b>How indicator can be broken down</b>	By route and junction to junction road links.
<b>Further guidance</b>	A full methodology document is available at: <a href="http://assets.dft.gov.uk/statistics/series/congestion-and-reliability/haontimemethodology.pdf">http://assets.dft.gov.uk/statistics/series/congestion-and-reliability/haontimemethodology.pdf</a>