

Measurement template

Field	Notes
Short title	Proportion of bus services running on time
Technical definition	<p>There are two elements to this indicator, one for non-frequent service and one for frequent services -</p> <p>Proportion of bus services running on time on non-frequent services (5 or fewer services per hour). "On time" is defined as being between 60 seconds early and 5 minutes, 59 seconds late.</p> <p>The average excess waiting time of frequent buses (more than 5 services per hour).</p>
Rationale	<p>Bus users name punctuality as one of the most important factors they would like improved with their services. Further information on this can be found in Public experiences of and attitudes towards bus travel, here- http://www.dft.gov.uk/statistics/releases/public-attitudes-towards-buses-march-2011/</p>
Formula	<p>Non-frequent</p> <p>Number of non-frequent services running on time (between 60 seconds early and 5 minutes, 59 seconds late) <i>divided by</i> Number of non-frequent services scheduled.</p> <p>Frequent</p> <p>Excess Waiting Time = Average Waiting Time - Scheduled Waiting Time.</p> <p>The full derivation of this measure is shown below. Conceptually, it represents the excess waiting time arising from irregular gaps between services, as opposed to services arriving at consistent timetabled intervals.</p>

	<p>Calculation of Excess Waiting Time (EWT): Example of Typical Scenario</p> <p>For a bus service with a scheduled frequency of 6 buses per hour, the following observations were made</p> <table><tr><th>Bus departure times</th><th>Headway (minutes)</th><th>Average wait time for each bus</th><th>Weighted average wait time</th></tr><tr><th>[A]</th><th>[B]</th><th>[C=B/2]</th><th>[D] = [BxC]</th></tr><tr><td>0802</td><td></td><td></td><td></td></tr><tr><td>0811</td><td>9</td><td>4.5</td><td>40.5</td></tr><tr><td>0819</td><td>8</td><td>4</td><td>32.0</td></tr><tr><td>0830</td><td>11</td><td>5.5</td><td>60.5</td></tr><tr><td>0850</td><td>20</td><td>10</td><td>200.0</td></tr><tr><td>0900</td><td>10</td><td>5</td><td>50.0</td></tr><tr><td>0913</td><td>13</td><td>6.5</td><td>84.5</td></tr><tr><td>0918</td><td>5</td><td>2.5</td><td>12.5</td></tr><tr><td>0930</td><td>12</td><td>6</td><td>72.0</td></tr><tr><td>0941</td><td>11</td><td>5.5</td><td>60.5</td></tr><tr><td>0950</td><td>9</td><td>4.5</td><td>40.5</td></tr><tr><td>1000</td><td>10</td><td>5</td><td>50.0</td></tr><tr><td>1020</td><td>20</td><td>10</td><td>200.0</td></tr><tr><td>1020</td><td>0</td><td>0</td><td>0.0</td></tr><tr><td>1030</td><td>10</td><td>5</td><td>50.0</td></tr><tr><td>1038</td><td>8</td><td>4</td><td>32.0</td></tr><tr><td>1050</td><td>12</td><td>6</td><td>72.0</td></tr><tr><td>1058</td><td>8</td><td>4</td><td>32.0</td></tr><tr><td colspan="3">Total (sum of [D] square of headways/2) [E]</td><td>1,089</td></tr><tr><td colspan="3">Time between 1st and last observed bus [F]</td><td>176</td></tr><tr><td colspan="3">Average Waiting Time (AWT) in minutes [G=E/F]</td><td>6.19</td></tr><tr><td colspan="3">Number of buses scheduled per hour [H]</td><td>6</td></tr><tr><td colspan="3">Scheduled Waiting Time (SWT) in minutes [I=Hx60x0.5]</td><td>5.00</td></tr></table> <p>EWT = AWT-SWT</p> <p>Excess Waiting Time 1.19 minutes [G-I]</p> <p>Full details on the formulae can be found here- http://www.clip.local.gov.uk/lgy/core/page.do?pageId=36703</p> <p>National Calculation</p> <p>National figures are calculated by weighting the Local Authority data we receive. This weighting is based on the number of services in a particular Local Authority from the National Public Transport Data Repository (NPTDR), here – table bus1001.</p>	Bus departure times	Headway (minutes)	Average wait time for each bus	Weighted average wait time	[A]	[B]	[C=B/2]	[D] = [BxC]	0802				0811	9	4.5	40.5	0819	8	4	32.0	0830	11	5.5	60.5	0850	20	10	200.0	0900	10	5	50.0	0913	13	6.5	84.5	0918	5	2.5	12.5	0930	12	6	72.0	0941	11	5.5	60.5	0950	9	4.5	40.5	1000	10	5	50.0	1020	20	10	200.0	1020	0	0	0.0	1030	10	5	50.0	1038	8	4	32.0	1050	12	6	72.0	1058	8	4	32.0	Total (sum of [D] square of headways/2) [E]			1,089	Time between 1st and last observed bus [F]			176	Average Waiting Time (AWT) in minutes [G=E/F]			6.19	Number of buses scheduled per hour [H]			6	Scheduled Waiting Time (SWT) in minutes [I=Hx60x0.5]			5.00
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Start date	Financial year 2004-05																																																																																																				
Performance	An improved performance will see the on-time figures for non-frequent services <u>increase</u> and the Excess Waiting Time for frequent services <u>decrease</u> .																																																																																																				
Behavioural impact	No obvious impact.																																																																																																				
Comparability	This measure is only used in England.																																																																																																				
Collection frequency	Annual																																																																																																				
Time lag	Approximately 5 months. The data are published in the September after the end of the financial year.																																																																																																				
Data source	The data are supplied by local authorities and published by the Department for Transport. The data collection is included on the Single Data List, a central list of all data required by central government from local authorities, which is held by CLG.																																																																																																				

Type of data	Official Statistics
Robustness and data limitations	Local authorities are given guidance to ensure consistency across the country. However, as with many collections of this type there are likely to be inconsistencies between individual returns, as the measurement process is managed locally.
Collecting organisation	The data are supplied by local authorities and published by the Department for Transport.
Return format	Non-frequent – percentage (of buses on time) Frequent – minutes (of Excess Waiting Time)
Geographical coverage	England
How indicator can be broken down	The full breakdown is available from the Excel or CSV table on the Business Plan Indicator web page.
Further guidance	<p>The full guidance on how to compile the indicators can be found here- http://www.clip.local.gov.uk/lgy/core/page.do?pageId=36703</p> <p>Related bus statistics are available here- http://www.dft.gov.uk/statistics/series/buses/</p> <p>Research on attitudes to bus travel can be found here http://www.dft.gov.uk/statistics/releases/public-attitudes-towards-buses-march-2011/</p>