



Department
for Transport

Travel time measures for local 'A' roads, England: April 2015 to March 2016



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About this release



This statistical release presents information about travel times on local highway authority managed 'A' roads in England.

The travel times used to calculate the measures in this release are estimated using in-vehicle Global Positioning Systems (GPS) observations from a sample of fleet cars and light vans.

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This release presents statistics using new travel time measures for local 'A' roads (managed by local highway authorities) in England, for the period April 2015 to March 2016. Historical data back to January 2014 are also presented. The release contains statistics on average speed and on average delay. These replace the 'average speeds during the weekday morning peak' measure for which we published statistics up to December 2015.

Key statistics

For the year ending March 2016 (i.e. the period from April 2015 to March 2016):

- ▶ The **average speed on local 'A' roads in England** across all time periods in the **year ending March 2016** is estimated to be **25.5mph**. This is a **2.1% decrease** on the year ending March 2015.
- ▶ The **average delay on local 'A' roads** in England was **44.7 seconds per vehicle per mile** when compared to free flow, for the **year ending March 2016**. This represents an **increase of 4.2%** compared to the year ending March 2015.
- ▶ Average speeds have decreased steadily since the start of this series in 2014. These decreases have been greater on urban classified roads than on rural roads. Combining these statistics with similar statistics previously published suggest average weekday morning peak speeds have been falling steadily for the past 4 years.

Context

These new measures were developed to provide a more complete picture of travel times on local 'A' roads and also to align with measures recently introduced for the [Strategic Road Network](#) (motorways and 'A' roads managed by Highways England). This allows us to compare travel times on local and strategic roads more easily.

In line with best practice, an [introductory analysis of these new travel time measures](#) on local 'A' roads was published in March 2016 to inform users and seek feedback. As a result of this feedback we have decided not to publish proposed statistics on the reliability of travel times. Further information on this, together with other feedback received and future plans for these statistics can be found on page 6. Statistics in this release are directly comparable with those published in the analysis paper referenced above.

To support the development of these statistics, we welcome any feedback, particularly on the presentation and commentary of the new travel time measures in this release. Please contact us using the details at the bottom of this page for any feedback you have, or if you would like further information.

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FURTHER INFORMATION: Media: 020 7944 3066 Public: 020 7944 6579 Email: congestion.stats@dft.gsi.gov.uk

Summary figures for average speed and delay on local 'A' roads

























DfT's congestion statistics



For further information, a concise [introduction to the Department's road congestion and reliability statistics](#) is available.

The summary table below presents average speed and delay on local 'A' roads in England for specified time periods and by road type classification in the year ending March 2016. It also shows changes in those average speeds and delays compared to the previous quarter (year ending December 2015) and last year (year ending March 2015).

Figure 1: Summary of recent changes in average speed and average delay compared to free flow on local 'A' roads in England

			Percentage change from...			
			Latest	Last Quarter		Last Year
			Year ending March 2016	Year ending December 2015		Year ending March 2015
	All day (24 hourly period)	Average speed (miles per hour)	25.5		0.2%	 2.1%
		Average delay (seconds per vehicle per mile)	44.7		0.3%	 4.2%
	Weekday morning peak (7am-10am)	Average speed (miles per hour)	24.0	---	0.0%	 1.6%
		Average delay (seconds per vehicle per mile)	53.0		0.3%	 2.2%
	Weekday evening peak (4pm-7pm)	Average speed (miles per hour)	22.5		0.3%	 2.7%
		Average delay (seconds per vehicle per mile)	63.2		0.4%	 5.1%
	Urban classified roads	Average speed (miles per hour)	18.7		0.3%	 2.7%
		Average delay (seconds per vehicle per mile)	74.2		0.4%	 4.9%
	Rural classified roads	Average speed (miles per hour)	36.9		0.1%	 0.6%
		Average delay (seconds per vehicle per mile)	19.7		0.1%	 0.3%

Notes

1. DfT defines 'urban' roads to be those within a settlement of 10,000 people or more. This is consistent with the [Rural and Urban Area Classification 2004](#). All other roads are defined as rural.

Introduction to average speed

This measure reflects the average speed of vehicles on local 'A' roads across the entire day (24 hourly period).



The measure weights speed observations from a sample of vehicles by associated traffic flows so that it is representative of traffic volumes on the roads in different locations and at different times of day.

Road facts



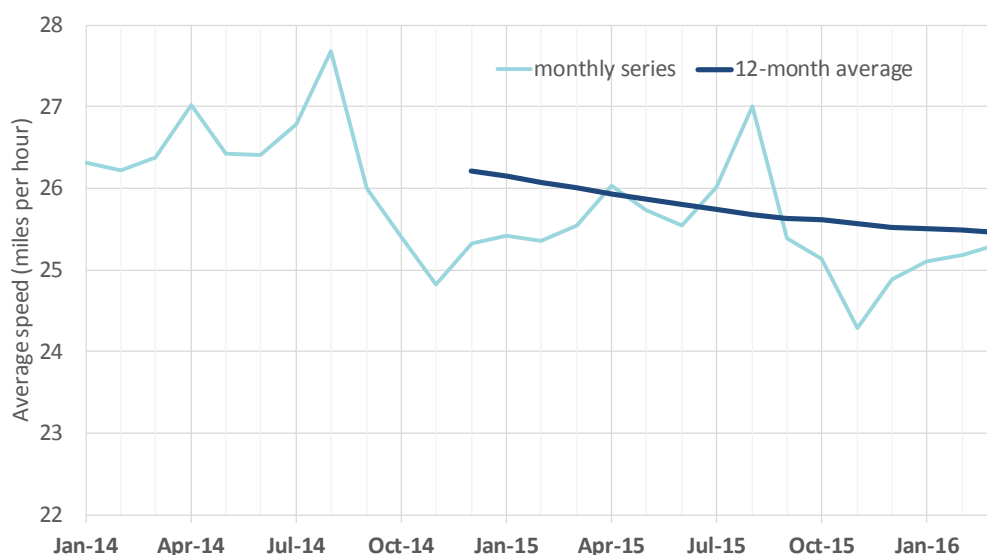
The local 'A' road network accounts for around 9% of all roads in England, but carries around a third of all traffic.

Almost one third of the local 'A' road network is classified as urban with the remaining two-thirds classified as rural.

National overview of average speed

The **average speed on local 'A' roads in England** across all time periods in the **year ending March 2016** is estimated to be **25.5 mph**. This is a **2.1% decrease** on the year ending March 2015.

Figure 2: Average speed on local 'A' roads in England (Table [CGN0501](#))



Since the start of this series in 2014 (year ending December 2014) and up to the year ending March 2016, average speeds (across the entire 24 hour period) have decreased by 2.9%. Over the same period, traffic on the 'A' road network has increased steadily.

Average speed by time of day and in urban and rural areas

Average speeds on local 'A' roads during the weekday morning peak (7am-10am) and the weekday evening peak (4pm-7pm) were 24.0mph and 22.5mph respectively in the year to March 2016.

Since 2014, decreases in average speed have been observed during both the weekday morning peak (7am-10am) and the weekday evening peak (4pm-7pm). Combining these statistics with similar statistics previously published suggests that average weekday morning peak speeds have been falling steadily for the past 4 years.

On urban classified local 'A' roads, average speeds were 18.7mph in the year to March 2016, compared to 36.9mph on rural local 'A' roads. Comparing these figures to 2014, the decrease in average speeds has been greater on urban roads (down 3.5%) than rural roads (down 0.9%).

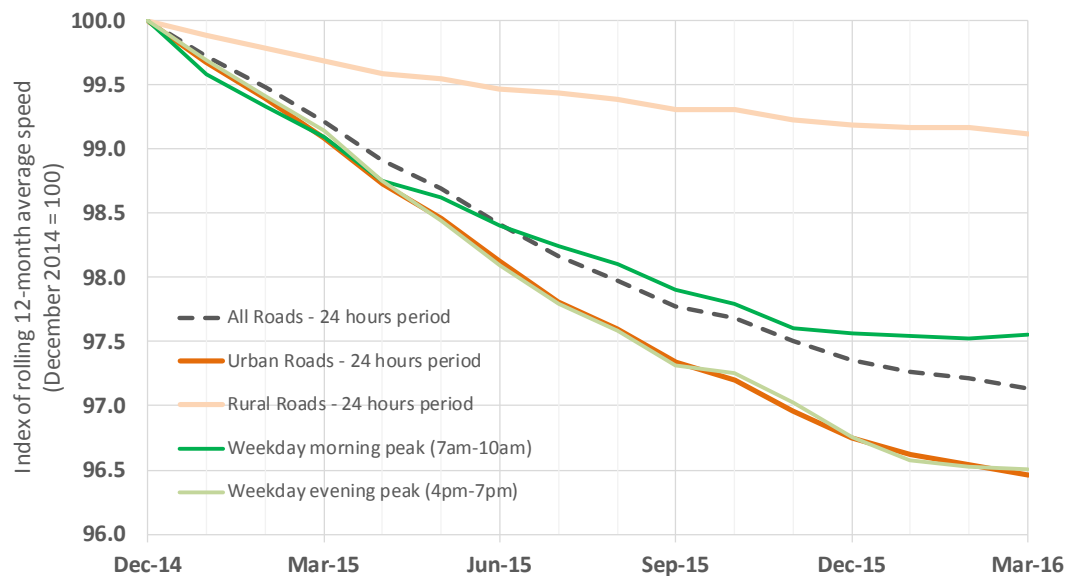
Note



The average speed and average delay figures presented in this release are calculated using travel time data from cars and light vans and across the entire local 'A' road network.

As such, in all cases, it would not be appropriate to use these averages to represent 'typical' speeds or typical delays on any individual road section or time of day.

Figure 3: Average speed (indexed) on local 'A' roads in England: Rolling 12-month average from year ending December 2014



Average delay on local 'A' roads

Average delay is presented across all 24 hours of the day and on a per vehicle per mile basis. Average delay is commonly used as a measure of relative congestion. One advantage it has over the average speed measure is that it takes account of different free flow speeds (often associated with different speed limits) allowing road sections to be compared more easily.

It is important to note that road users often do not expect to encounter free flow conditions (particularly during peak times) and consciously build in additional time for their journey based on their own experience. As a result, drivers may perceive delay relative to their expected (or average) journey time rather than free flow conditions.

National overview of average delay

The **average delay on local 'A' roads in England** across all time periods in the **year ending March 2016** is estimated to be **44.7 seconds per vehicle per mile** compared to free flow. This is a **4.2% increase** on the year ending March 2015.

Between 2014 and the year ending March 2016, average delay compared to free flow has increased by 5.8%. Over the same period, traffic on the 'A' road network has increased steadily.

Introduction to average delay



Delay (or 'time lost') is calculated by subtracting derived 'free flow' travel times from observed travel times for individual road sections. Average delay is calculated by aggregating delay estimates from individual road sections and weighting observations by associated traffic flows so that it is representative of traffic volumes on the roads (as for average speeds).

Free flow



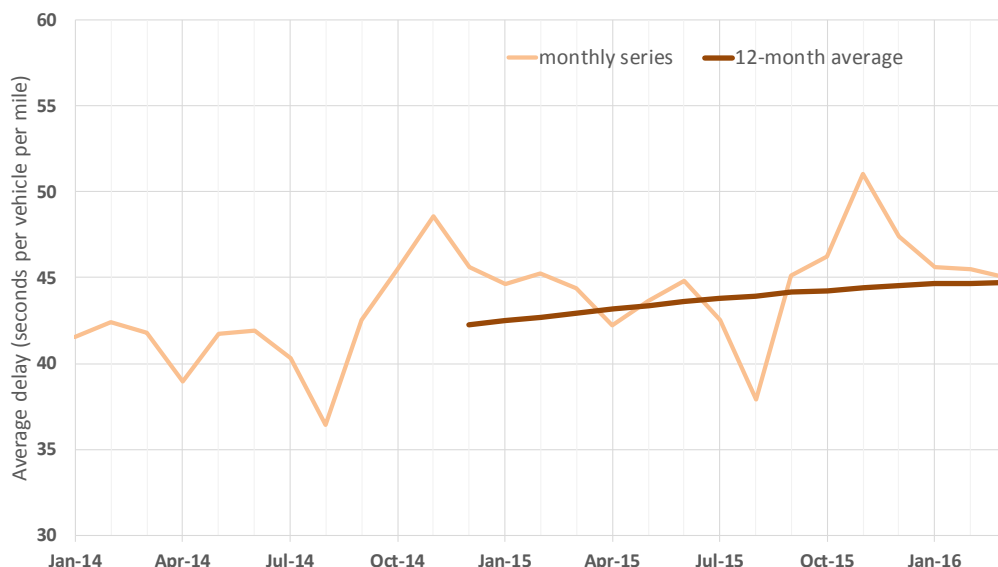
Free flow travel times (used to calculate the average delay measure) are currently calculated using the 85th percentile speed observation, for each individual road section. These are 'capped' at national speed limits.

Geographical network



These travel time measures are based on data matched to the Ordnance Survey ITN mastermap representation of the local 'A' road network in England.

Figure 4: Average delay on local 'A' roads in England compared to free flow (Table [CGN0502](#))



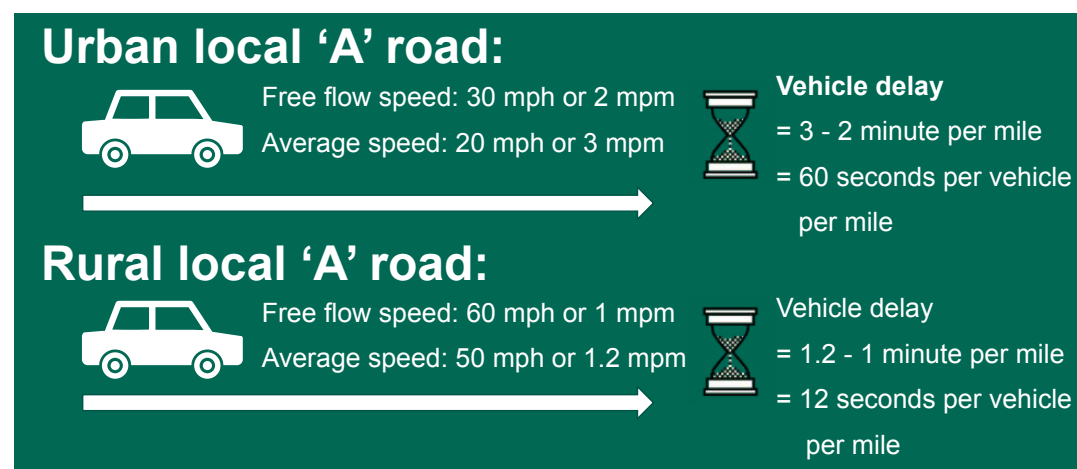
Average delay by time of day and in urban and rural areas

Average delay on local 'A' roads during the weekday morning peak (7am-10am) and the weekday evening peak (4pm-7pm) was 53.0 seconds per vehicle per mile (spvpm) and 63.2spvpm respectively compared to free flow in the year to March 2016.

On urban classified local 'A' roads, average delay was 74.2spvpm in the year to March 2016, compared to 19.7spvpm on rural local 'A' roads. Compared to 2014, this represents a rise in average delay of 6.6% on urban local 'A' roads and 1.0% on rural local 'A' roads.

It is important to note that urban roads generally have lower free flow speeds than rural roads. As a result, a fixed absolute decrease in observed speeds will generally translate into a higher level of delay on urban roads (relative to rural roads). The example below illustrates this.

Figure 5: Example of average delay on urban and rural local 'A' roads



1. mph = miles per hour

2. mpm = minutes per mile

User feedback

The content and presentation of statistics in this release have been influenced by feedback on proposals set out in the [‘Congestion on local ‘A’ roads, England: October to December 2015’](#) statistical release published in February 2016, together with feedback on the [‘Analysis of travel times on local ‘A’ roads, England: 2014’](#), published in March 2016.

The main areas of feedback to date are as follows:

1. Usefulness of the proposed new travel time measures (i.e. average speed, delay and reliability)

The average speed measure is generally agreed to be most useful. This measure provides some continuity on the previous ‘Congestion on local ‘A’ roads’ statistics and is the easiest measure to understand. The average delay measure is generally agreed to be a welcome addition to a measure of average speed. Average delay allows outputs on different road types and with different speed limits to be compared more easily. Whilst there has been interest in the reliability (Planning Time Index) measure, users have struggled to relate to the outputs, how to interpret them, and are unclear how the measure ‘adds value’ when presented alongside average speed and delay.

2. Geographical disaggregation of the measure outputs

In general, users would like to see more detailed geographical disaggregation (e.g. by local highway authority or individual roads) of outputs as these are more useful and of interest.

3. Temporal disaggregation of the measure outputs

Users are keen to see the measures presented for weekday morning peak (7am-10am) and weekday evening peak (4pm-7pm) periods. Some users specified alternative ‘peak’ periods they would like to see.

4. Publication frequency

Most users favoured retaining quarterly updates of these statistics. A smaller number of users suggested that 6 monthly or annual publications would be sufficient for their needs.

Thank you to all who provided feedback on these statistics. Any further comments can be provided via the contact details on the front of this release.

Future plans

As a result of this feedback we have not published reliability statistics in this release (see comments above). We will continue to develop our understanding of travel time reliability and the strengths and limitations of related measures and will revisit the inclusion of reliability statistics in this release later this year.

We recognise the value and interest in sub national statistics (e.g. region, by local highway authority, by road) and intend to publish more statistics at this level in a more detailed annual release next year. We will continue to review content and presentation of these statistics, which we expect to develop further over time.

Background information



Related information



Information on traffic volume and flow used in weighting average speeds is available at: [Road traffic statistics](#)

Attitudes on road congestion can be found in the British Social Attitudes Survey, which is available at: [British Social Attitudes Survey: 2014](#).

National Statistics



National Statistics are produced to high professional standards set out in the National Statistics [Code of Practice](#). They undergo regular quality assurance reviews to ensure they meet customer needs.

Details of ministers and officials who receive pre-release access to these statistics up to 24 hours before release can be found [here](#)

Methodology and technical detail

1. Users should exercise some caution when interpreting the analysis in this paper, particularly when looking over short periods of time. Travel times (and the measures in this paper) are likely to be affected by a range of factors such as traffic levels, weather, roadworks, or changes to speed limits.
2. The underlying datasets used to produce the analysis in this paper are similar to those used for the previous [average speeds on local A roads during the weekday morning peak statistics](#). The data are based on travel times estimated using Global Positioning Systems (GPS) and traffic flows estimated using Department for Transport's traffic count information.
3. The statistics in this release use travel time information from car and light commercial vehicles (LCV) only. We have not included HGV travel time information due to low sample sizes. Over 100,000 cars and LCVs each month were used to calculate the measures. Measures are weighted by associated expected traffic flows to ensure that they represent traffic volumes on the roads in different locations and at different times of day.
4. All measures use real, observed travel time data with a good temporal match where available. Where there is insufficient data for individual road sections for a particular time period, travel times are imputed using corresponding monthly and hourly averages from individual road sections with similar road characteristics.
5. For the average delay measure, free flow travel times are derived by taking the 85th percentile speed across all car and LCV observations over a year, 'capped' to current national car speed limits (i.e. 60 mph for single carriageway and 70 mph for dual carriageway). As such, there may be cases where derived free flow speeds are greater than the legal speed limit on some road sections.
6. The Department for Transport publishes a separate statistics series on [free flow vehicle speeds](#) on roads in Great Britain. That series focusses more on the speeds at which drivers choose to travel and their compliance with speed limits. Free flow speeds presented in that release are calculated in a different way and using a different data source to the free flow speeds used in this release.

Next update

The next release in this series is expected to be published in August 2016. This will contain monthly figures and twelve month rolling average figures for the period April to June 2016.